

THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.
RAILWAYS • ILLUSTRATED • ESTABLISHED 1835 • THE RAILWAY OFFICIAL GAZETTE

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Annual subscription £3 10s. 0d. post free. Single copies, One shilling & sixpence
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Vol. 93]

FRIDAY, JULY 7, 1950

[No. 1

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DIESEL RAILWAY TRACTION

The July issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, is now ready, price 2s.

Workers Management of Railways

THE annual conference of the National Union of Railwaymen at Morecambe devoted a good deal of time to a public discussion of a resolution urging much greater direct participation by the workers in the management of the railways. The resolution instructed the union Executive to take immediate steps towards this end and several of the speakers left no doubt of their own conviction as to the desirability of a development of this kind. This claim by the N.U.R. is not new. It has formed part of its policy for many years and has been urged with increasing force since the nationalisation of railways at the beginning of 1948. Since the passing of the Transport Act, railwaymen at all levels have been accorded an increasing participation in the organisation of the industry, through the extensive consultative machinery which has been greatly broadened in the last year or so. They have far greater opportunities than formerly of keeping themselves informed as to the reasons behind nearly all matters of managerial policy. Apart from wage rates and so forth, for which there has been

in existence for a great many years an extremely comprehensive machinery of negotiation, which has often been cited as one of the best of its kind in the world, there has developed a system of consultation based either on formal meetings of committees or informal discussions with principal officers. At these meetings the men have a practically unlimited right to raise for discussion any matter with which they are concerned. There can be no doubt that this consultative machinery has served a very useful purpose from the point of view of both men and management. Direct union participation in management, however, would raise far-reaching issues, many of which probably have not yet been considered in all their implications by those who press most energetically for it. Often enough it might involve a divided loyalty, which would redound to the benefit of neither men nor management, nor of the public which both should be seeking to serve. It is not always recognised that management involves responsibility and a high degree of single-mindedness in carrying out its remit, which in the case of the railways is contained basically in the Transport Act, 1947.

Transport Integration

THE British Transport Commission has produced a memorandum on the principles which will guide it in the integration of the different sections of the country's transport. It has presented copies to the Joint Consultative Council, which includes members of the Commission, the Chairmen and some other members of the various Executives, representatives of the Associated Society of Locomotive Engineers & Firemen, the National Union of Railwaymen, and the Railway Clerks' Association, the Transport & General Workers Union, and the Confederation of Shipbuilding & Engineering Unions. This council usually meets quarterly, but after receiving the B.T.C. memorandum, it decided that a number of points in it needed further discussion and that an early meeting would be desirable. It was emphasised that at the present stage, the memorandum should be treated as a confidential document, although the principles which have been drawn up may be made public shortly. The preparation of detailed schemes will have to await the completion and approval of plans for passenger transport and port and harbour facilities, and the taking over of the remaining road haulage undertakings to be acquired. It is generally believed that the charges scheme which the Commission has had under consideration practically since its inception, and which must be ready for submission to the Transport Tribunal by the end of 1952, is a necessary preliminary to any major progress towards integration.

Road Hauliers and the Transport Act

THE speeches at the annual luncheon last week of the Road Haulage Association, which represents the interests of some 50,000 hauliers outside the ownership of the British Transport Commission, showed that there is still a good deal of dissatisfaction with the Transport Act, 1947. These hauliers are mostly small men, and Mr. Frank F. Fowler, Chairman of the R.H.A., said they did not know when their destruction would be complete. The trade and industry of this country disliked placing their goods in the hands of a monopoly and he urged the repeal of the Act. He was sure that the railways, on a reorganised basis, could make profits without penalising road hauliers. Lord Llewellyn, Lady Tweedsmuir, M.P., Mr. C. F. Byers, Chairman of the Liberal Party, and Mr. W. J. Brown, a former Independent Member of the House of Commons, agreed that there was a great deal in the British transport situation which needed improvement. Before the luncheon, the Council of the Association conferred on Mr. B. G. Turner, immediate past Chairman, honorary membership of the Association. Mr. Turner has given over seventeen years of service to the Association and the road haulage industry and he is the first to receive honorary membership—a distinction which it was decided at the time of its creation should be conferred very sparingly.

Transfer of Southampton Docks Control

IT is announced that the operation and management of Southampton Docks will pass from the Railway Executive to the Docks & Inland Waterways Executive on September 1. This decision is in continuance of the policy of the British Transport Commission in regard to the transfer of former railway owned ports other than packet ports. This arrangement will, therefore, involve the transfer to another Executive of staff employed on docks duties, though the marine services of the Southern Region of British Railways will remain, with their staff, under the control of the Railway Executive as they are now. Before the change there will be close consultation between the Executives and the trade unions regarding any staff questions that may arise. For many years Southampton has maintained her position as our premier passenger port. Much progress has been made, also, with post-war plans for crane replacements and other mechanical aids, while the new Ocean Passenger Terminal will be ready in the near future. Mr. R. P. Biddle, Docks & Marine Manager, will continue to occupy that post with joint responsibility to the Docks & Inland Waterways Executive and the Railway Executive for docks and marine matters, and in this way his services will remain available to both Executives and to the users of the port.

Overseas Railway Traffics

CANADIAN National Railways operating revenues during May were £2,450,000 higher, at £15,845,000, and despite a £536,000 advance in operating expenses, net revenue at £2,113,000 was up by £1,914,000. On the aggregate C.N.R. net revenue for the first 22 weeks of 1950 amounted to £3,313,000, as compared with £21,000 for the equivalent period of 1949. Gross earnings of the Canadian Pacific Railway during May improved by £517,000 to £10,674,000, and net earnings were £518,000 higher at £802,000. Though aggregate C.P.R. gross earnings were down by £395,000, net earnings, at £1,903,000, compared with £826,000 for the same period last year. Paraguay Central traffics for the fortnight ended June 23 again showed substantial advances over the equivalent two weeks of 1949. During the first week there was a G106,785 improvement to G198,599 and a G84,678 advance to G194,399 followed. At the end of 51 weeks Paraguay Central receipts had increased by G2,578,630 to G7,886,649.

Scottish Region Punctuality

PASSENGER train punctuality in the Scottish Region of British Railways made a further improvement during the four weeks ended March 25, when the average late arrival was 0.8 minutes. This was the best result this year and showed a slight improvement over the comparative figure for 1949. During both years there has been a steady decline in late arrivals between the beginning of January and March, and at May 20, 1949, punctuality for the four-weekly period reached the highest standard of the year; subsequent figures will show whether the same trend will be continued in 1950. A further analysis shows that during the period ended March 25, 86.2 per cent. of the 54,795 trains run arrived punctually, 10.1 per cent. were from 1 to 5 min. late and only 3.7 per cent. were over 5 min. late. These results show an all-round improvement on the figures for the period ended February 25, when 80 per cent. of the 54,971 trains run were on time, 13.1 per cent. were 5 min. late or less, and 6.9 per cent. were over 5 min. late.

Closing of Branch Line Opposed

FOR some time the Railway Executive has pursued a policy of closing little used stations and branch lines which it considers could be equally well run or more economically served by road. This action has given rise to complaints more than once, but, until last week, complaints have amounted to little more than protests. Lord Blades, in the Court of Session in Edinburgh on June 30, granted an interim interdict against the Scottish Region of

the Railway Executive discontinuing on July 3 the passenger train service on the Newburgh and North Fife branch line. This action was brought by the Fife County Council and others who are seeking a declaration that the Railway Executive is bound to provide a reasonable service on a line which has been in use since 1909. They contend also that the closing of the line would cause loss and hardship to a large farming community in the area. Lord Blades said that nationalised undertakings could not "take the law into their own hands" and they must maintain the *status quo* until the matter was on a proper footing. When the Railway Executive lodged its defence the position would be reviewed again. Meanwhile the service continues.

Mechanically-Operated Liner Gangways

THE erection of the first of three complete units, consisting of shore stations each with two mechanically-operated telescopic gangways, has reached an advanced stage and will shortly be completed. The design of these gangways, which form a part of a development scheme undertaken by the Southern Region of British Railways at Southampton Docks, is such that to accommodate vessels of varying displacement the gangways move along the quay to a position opposite the ship's entry doorways. The gangways can also move in an upwards direction to suit tide level, and rotate sideways to meet fore and aft movement of berthed ships. When not in use the gangways swing back parallel to the dock and clear of cargo operating cranes. To serve all classes of passengers, three gangways are being installed, each having two telescopic walkways, one each for ingress and egress. The shore housing is 26 ft. long × 20 ft. wide × 16 ft. high and the outer gangway is 40 ft. long × 4 ft. 6 in. wide × 8 ft. high, while the inner gangway is 43 ft. long × 3 ft. 9 in. wide × 7 ft. 6 in. high, the total length of the gangways when fully extended being 68 ft. Further information is given elsewhere in this issue.

Railway Film Strips for Schools

AS they are future patrons and, in some cases, prospective employees, the stimulation of interest among the young has always been considered of great importance by the railways. Three film strips recently completed by Unicorn Head Visual Aids Limited, although offered primarily as examples of milestones in British industrial history for educational purposes, should also promote an intelligent enthusiasm in railway developments. Each of the strips is accompanied by lecture notes. "The Steam Engine (up to 1805)" traces the origin of the steam engine, invented as an answer to manual labour difficulties of the seventeenth century, and its technical development to the beginning of the nineteenth century; "Liverpool to Manchester" (in colour) deals with the early history of the Liverpool & Manchester Railway and the engineering problems encountered by Stephenson when building the railway; and "Early Locomotives" portrays some of the first locomotives to the *Lion* of 1838. The strips have been produced in co-operation with the National Committee for Visual Aids in Education and are intended for the upper forms of modern and grammar schools.

A Runaway at Lime Street

THE accident at Lime Street, Liverpool, on November 19, 1949, when an empty stock train got out of control on the 1 in 93 gradient and dashed into the buffers at No. 6 platform, causing much damage, was inquired into by Brigadier C. A. Langley, whose report is summarised in this issue. It was found that the vacuum brake connection had not been made between the first and second vehicles and it was thus quite impossible for the driver, who probably had been led into a false sense of security by some initial difficulties in creating vacuum, to keep control of the train by the time the lack of brake power became apparent. The circumstances leading to the omission to couple the brake connection were a little involved and indicated the necessity for clearer instructions, but the accident would not have occurred had the ordinary rules regarding the

testing of the brake been carried out. The guard's failure to make the test Brigadier Langley finds "inexcusable," and was especially serious at this particular locality.

Railway Labour Unrest

THE formal abandonment by the Trades Union Congress General Council of rigid wage restraint, which for some time it had been unable to implement in the case of a number of its affiliated unions, has brought wages policy back to the position which obtained before devaluation of sterling. Then, although official policy favoured wage stabilisation, it was recognised that there should be liberty for the lowest-paid workers to endeavour to improve their positions. With devaluation, a complete wage freeze was urged until there had been a seven points rise in the retail price index. The present position is that responsibility for wage levels has been passed back to the individual unions, with a warning that the basic economic difficulties remain and urging "good sense and reasonableness" on the unions. The T.U.C. General Council also offers its services for consultation by any union needing assistance in considering its problems.

In the light of the statement of the T.U.C. and also of the narrowing of wage differentials which has occurred in recent months, it may be expected that a number of unions will be impelled by their members to seek to justify wage advances. To the forefront of these appeals almost certainly will be the National Union of Railwaymen, for its General Secretary, Mr. J. B. Figgins, last weekend once more expressed dissatisfaction with railwaymen's pay. The N.U.R. is already in negotiation with the Railway Executive with a view to securing improvements for lower paid workers. He was reported as saying at a union rally at Morecambe that the expected deficits on British Railways were not the responsibility of the workers but of such things as increased cost of petrol, imported materials, devaluation, price increases and taxation on motor vehicles. He added, with logic all his own, that if the Railway Executive has to pay these increases for essentials, for the maintenance of British Railways, they should be compelled to increase the price of labour.

Mr. Figgins went further and, as he has done on previous occasions, advocated the complete removal of the Conditions of Employment & National Arbitration Order, under which it is necessary to declare a dispute in the event of no agreement being reached by negotiation. The Minister then appoints arbitrators to deal with the matter. Twenty-one days' notice has to be given of the existence of a dispute, and during that time no cessation of labour is legal. Presumably what Mr. Figgins is urging, is greater freedom to strike. One would have thought that in present circumstances, when the unofficial strike has proved such an embarrassment to unions and management alike, the time was hardly best chosen for doing anything which might encourage greater unrest.

At the present time, weekend unofficial strikes are causing interruptions to services in the Banbury area of the Western Region. The trouble arose because of objections among the men to alterations in a local pensions scheme. Hitherto, the scheme to which the Western Region locomotive men contribute has been compulsory, but recently the Railway Executive decided that as from July 1 it should be put on a voluntary basis, to bring it into line with pension schemes in other parts of the country. After protests by the men, assurances were given that none would be worse off as a result of the change. Presumably this means that any losses due to a fall in contributions would be made good by the management. Despite this, last weekend the men of Banbury came out on strike, although other depots were at work as usual. The Banbury men extended their strike beyond the weekend in protest against a request for explanations of their absence from duty. Later they were supported by a number of men at Paddington.

The dispute over locomotivemen's pensions may prove of wider importance than the unofficial strikes at Banbury. The Associated Society of Locomotive Engineers & Firemen has been urging the establishment of a full pension scheme for its members, and the attempt by the Railway

Executive to standardise the Western Region scheme with those in other parts of the country may give the union the lever they have sought. In any event, British Railways, having undertaken that no member of the Western Region scheme shall be worse off as a result of the change, has incurred liability for some expenditure, even though it may be very small. There may be a good deal to be said for establishing a pension scheme for footplate men, but the economics of the railway situation at present are hardly the most suitable. It may well prove that it would have been wiser to have let well alone in the meantime.

International Railway Transport

SINCE 1933 the International Chamber of Commerce has been urging the Central International Railway Transport Office—usually called the Berne Office—to admit its representatives to the Revision Conferences of the Berne Conventions (C.I.M. and C.I.V.) so that they can express the agreed views of business. This request has now been granted and the decision was announced at a recent meeting of the Commission on Railway Transport held in Paris.

This meeting, presided over by M. J. Marjoulet, France, discussed various amendments to the C.I.M. with a view to submitting them to the official Revision Conference next year. One of the proposals suggests that the present period of a fortnight for the application of increases in international railway rates be extended to one month to enable users to make arrangements to meet obligations which are sometimes undertaken several months before the increase. Another proposal would imply the obligation for the railway to take a decision within three months on all claims submitted; at present there is no time limit.

Shipment of goods in containers have developed considerably during recent years. Nevertheless, containers have no definite status in international traffic, and at the present time railway administrations treat them in the same way as ordinary packaging. The I.C.C. proposes to regulate the treatment of containers in a special appendix to the C.I.M. and the Berne Office has already complied with this request by setting up a special commission to study the drafting of this appendix.

The need for revising the present treatment of privately owned wagons was forcibly stressed during an informal meeting of owners, constructors, carriers, and users. The meeting recommended that privately owned wagons should be treated in the same way as wagons owned by the railways for the purpose of the appropriate Articles of the Berne Convention. This proposal has been advocated by the I.C.C. since 1933, and it has argued that the existence of privately owned wagons for special traffics is of considerable advantage for the railways. While doing away with the need for building and maintaining large quantities of specialised rolling stock, it ensures that certain kinds of traffic such as the transport of ore, coal, oil, chemicals, alcohol, and wine are preserved for the railway. A special commission recently set up by the Berne Office is now studying ways and means of putting this recommendation into practice.

The discussion also stressed the need for all interested in privately owned wagons to meet periodically with a view to examining the best means for promoting the use of such wagons, for improving their technique, and for facilitating their circulation in international traffic. The International Union of Associations of Owners of Privately Owned Wagons which has recently been set up proposed itself as a link between the various interests. It is contemplating a modification of its structure so as to include representatives of all those interested in privately owned wagons, and is prepared to place itself under the aegis of the I.C.C. The I.C.C. Commission on Railway Transport will study this proposal.

Other problems dealt with included the effects of railway rates on the direction of traffic and their impact on transport co-ordination, the creation of a negotiable way-bill—which proposal has aroused considerable interest especially in Belgium and Sweden—and, last, the necessity for safeguarding essential services in international traffic.

East African Transport Problems

THE East African Railways & Harbours Administration is responsible for the construction, operation, and maintenance of all public railways and ports in East Africa. It was formed on May 1, 1948, by the amalgamation of the Kenya & Uganda Railways & Harbours and the Tanganyika Railways & Ports Services. The railway consists of 2,930 route-miles, with another 300 under construction. Mombasa, Tanga, and Dar-es-Salaam are ocean ports; a quay suitable for ocean-going vessels is under construction at Mtwara.

In his paper "Railway & Port Problems in East Africa," given before the Institution of Civil Engineers during the conference on Colonial development held from July 3 to today, as recorded in our June 30 issue, Mr. J. R. Farquharson, Deputy General Manager & Chief Engineer, East African Railways & Harbours, said that the problems which confront the administration arise from the unusually rapid growth of traffic during and since the war. On the Kenya-Uganda section passenger earnings have risen from £158,962 in 1935/6 to £730,000 in 1949. On the Tanganyika section, the rate of growth has been even more rapid in recent years. The exceptional rate of growth of traffic in East Africa since the war has been caused by two main factors: a high rate of new capital investment from overseas; and a great improvement in the terms of trade. The increase in the volume of East African exports has been modest.

Export traffic through the ports has developed steadily, but import traffic has shown great increases in recent years. The import and export tonnages through Mombasa in 1949 were 2,450,000 compared with 1,206,555 in 1939.

The rapid increase in imports at Dar-es-Salaam from 1947 (282,759 in 1947; 390,000 in 1949) was caused by the factors common to other ports, and also by the heavy imports of the Overseas Food Corporation and a rise in the in-transit traffic to and from the Belgian territories. At Tanga, the great increase in the price of sisal has led to a substantial increase in imports since the war.

Most of the engineering problems facing the transport administration arise directly from the level of traffic, and the probable trend over the next decade is the main factor in determining how available resources in men and materials should be used to the best advantage to increase capacity. While it seems inevitable that the terms of trade must gradually become less favourable to East Africa, there is a widely-held view that the producers of raw materials will never again be so unfavourably placed in relation to industrial countries as in 1939-40. The transport administration must continue to increase its capacity, so that on the various sections there is a reasonable margin above the probable maximum demand.

The original Uganda Railway from Mombasa to Kisumu was laid with 50-lb. rails and steel-lugged sleepers. The section from Mombasa to Nairobi was relaid with 80 lb. rails and lugged sleepers during 1920-30. The increase in track strength has been fully justified; the section now carries an average of about 15 trains per day, each of about 725 tons gross weight. The realigned track from Nairobi to Nakuru will shortly be completed with 80-lb. rails, and it is proposed during 1950 and 1951 to lay the Nakuru-Eldoret section with 80-lb. rails.

The steel sleeper has proved a sound economic investment. The price of steel is now such that the use of hardwood sleepers will have to be considered. Steel sleepers and fittings for 60-lb. track cost about £3,900 per mile in East Africa; untreated local timber sleepers and dogspikes from £1,200 to £2,000 per mile. In general, the bridges are of a strength to accord with the loading permitted on the track, but it will be desirable to undertake some strengthening of bridges so that advantage may be taken of the 60-lb. track when it is laid.

Before and after the first war, the Mombasa-Nairobi section was gradually improved until the gradients were 1.5 per cent. uncompensated against up traffic and 1.18 per cent. compensated against down traffic. These gradients have also been adopted on the largest and most recent pro-

ject, the virtual rebuilding of the line between Nairobi and Nakuru. Over this section of 113 miles, a total of 87 miles of entirely new line has been laid.

The two principal new lines under construction are the Mpanda line (130 miles) and the Southern Province Railway (about 160 miles). The Mpanda line is being built in the Western Province of Tanganyika from Kaliuwa, on the Central Line, to the Mpanda mine, through moderately easy country. The Southern Province Railway is an entirely new and separate line in southern Tanganyika, and was constructed for the Overseas Food Corporation. The Mkwaya-Nachingwea section (82 miles) has been opened and work is proceeding on the remainder.

Railways approved since the war have been built either to serve mines or the cultivation areas of the Overseas Food Corporation. These lines, and the Nairobi-Nakuru realignments, will be completed during 1950 and 1951, and the men and equipment employed on these works could readily be transferred to other projects. No other demands for single-purpose lines have been made, but various projects for the extension of the railway system have been considered at intervals during the past quarter of a century. Four main projects may be mentioned: first, a connection between the Tanga and Central Lines in Tanganyika; secondly, a line southwards from the Tanganyika Central Line, ultimately to be linked with the Rhodesian system; thirdly, a line to serve the coalfields of southern Tanganyika, connecting either with the projected line between Tanganyika and the Rhodesias, or with the new line in the Southern Province; and, fourthly, a line from Kampala to serve western Uganda and, ultimately, to join the transport system of the Belgian Congo.

The connection between the Central and Tanga Lines would be about 160 miles long, through moderately difficult country. The proposed link would ensure quicker movement of passengers and goods and facilitate transfers of rolling-stock between the present disconnected parts of the system. It would also form part of the ultimate north-to-south railway linking East and Central Africa. The line is likely to be built within the next 10 years or so.

A scheme for a line southwards from the Tanganyika Central Line was seriously considered about 1930, but was shelved during the depression. The area is now largely served by road services but the time may soon be ripe for a railway. The agreed route leaves the Central Line in the Morogoro-Kilosa area, proceeds to the upper Kilombero valley, and is then faced with a rise of about 3,900 ft. in about 90 miles. The alignment will be suitable for the through line to the Rhodesias.

The probable need for a railway to serve the coalfields in the Ruhuhu valley, to the north-west of Lake Nyasa, has been raised. In 1930, a preliminary survey of a line from Kampala to the Uganda-Congo frontier was completed. A railway from Kampala to Lake George, and a transport service on the connected Lakes George and Edward, would bring great benefits. In addition, it appears probable that it will be necessary to consider the provision, below the "bulge" of Africa, of a trans-continental transport route of considerable capacity.

As all track and rolling stock provided after 1930 were designed for conversion from metre to 3 ft. 6 in. gauge, the difficulties of conversion have been minimised. The most suitable time for beginning the conversion will probably be about 1965-75, when the pre-1930 rolling-stock and track will be approaching the end of its useful life; it may be necessary to act earlier for part of the system, if a link is made before then with the Rhodesian Railways.

The maintenance and minor improvement of the existing railways and ports of East Africa present interesting problems. Even if there is some recession in traffic, the trend is likely to continue upwards for many years; the consequent need for major improvements on existing facilities and the probable construction of new railways will provide problems of considerable magnitude and of great variety. Railway extensions and deep-water quays require a reasonable time for survey and planning if capital is to be wisely spent. The construction work should be carried out at a steady pace as a long-term policy, irrespective of minor fluctuations in the level of the traffic.

British Transport Commission Traffic Receipts

THE traffic receipts for the four-week statistical period to June 18 of the British Transport Commission's main sources of revenue were £3,165,000, or some 10 per cent., in excess of the previous period and £1,402,000, or 4 per cent., over the corresponding figure for last year. This represents a considerable improvement during the past two months, during which the slight downward trend apparent from the April figures has been more than arrested.

British Railways total receipts were £1,267,000, or nearly 5 per cent., above the previous statistical period. This was mainly due to the rise in freight and parcels rates by one sixth on May 15. Despite this, freight and parcels receipts exceeded those of the corresponding period of 1949 by only £1,778,000, or 11 per cent. The main increase was in coal and coke traffic, of £853,000, or 16 per cent. General merchandise and livestock, which are the most susceptible to road competition, showed a rise of only 9 per cent.

No comparison with 1950 is possible for British Road Services (freight haulage), in view of the many acquisitions by that Executive of undertakings during the year. Inland waterways receipts show an increase of £16,000, or nearly 14 per cent.

Passenger receipts, compared with last year, when this period also included the Whitsun holiday, fell by £511,000, or 5 per cent. There were also decreases of £27,000 (or 2.4 per cent.) in London Transport railway traffic, and of £38,000 (or 1.5 per cent.) in London buses. That the fall in passenger receipts was not caused by the freeing of petrol is shown by the very similar decreases in British Railways and London Transport railways receipts for the preceding statistical period as between the years 1949 and 1950.

It seems that, so far, in the diversion of passenger traffic to the roads, the bus and motorcoach have taken what the railways have lost. Other factors are reduced spending power, and the last-minute derationing of petrol only just before Whitsuntide, which latter has probably kept the decrease in rail passenger receipts as low as it was.

receipts for the main means of transport very slightly exceeded those for last year. This was due mainly to the rise in rail freight rates. Even so, the position is better than a year ago.

PERCENTAGE VARIATION 1950 COMPARED WITH 1949

	4 weeks to June 18	24 weeks to June 18
British Railways		
Passengers	-5.1	-5.4
Parcels	+3.9	+2.0
Merchandise & livestock	+9.2	+3.8
Minerals	+11.2	+5.9
Coal & coke	+16.1	
Total	+4.8	+0.1
Road Passenger Transport	+7.5	+3.7
London Transport		
Railways	-2.4	-1.5
Buses & coaches	-1.5	-1.6
Trolleybuses & trams	-4.4	-2.9
Total	-2.3	-1.8
Inland Waterways	+13.9	+0.9
Aggregate	+4.1	+0.1

Construction Along the Foot of the Himalayas

ANYONE familiar with the Terai or Himalayan submontane belt will well understand what difficulties are entailed in the construction, against time, of 75 miles of new railway parallel to the foothills. In the first place, the reconnaissance, preliminary, and location surveys are severely handicapped by the dense tropical forest and undergrowth encountered, and jungle-clearing for making service roads is slow work for the same reason. More important is the fact that all the drainage of the belt is across the railway alignment, and fast-flowing mountain torrents debouching from the hills at frequent intervals have to be bridged and often trained also. In this terrain, where the rainfall is so heavy—especially in and near Assam, where it is within 100 or 200 miles of Cherrapunji with the world's heaviest average rainfall of 450 in. a year—these rivers and streams come down in sudden and violent spate, and the working season is limited by the long monsoon period to a few months of low water each year.

Well-sinking for bridge piers must therefore be well organised and rapidly carried out, though obstacles such as big boulders and tree trunks buried in the river bed are common and cannot be foreseen. Any hitch in the steady flow of materials is fatal, and it must be remembered that railheads in turn are restricted by the river gaps in communications. Service roads have to be relied upon to a large extent for the transport of materials and supplies, and they are difficult to maintain as well as to construct. Moreover, the efficiency of labour is adversely affected by malaria and a frequently trying, humid and breezeless climate.

The Indian engineers who have undertaken such a construction task on the Assam Rail Link are therefore to be congratulated on their remarkably fine achievement in completing the work in such a short time, as recorded in an article elsewhere in this issue. It must be realised that their maintenance problems for the next few years will be great. The most carefully estimated figures for run-off and river discharge are liable to be falsified in such country, and a new line is bound to suffer breaches and other damage at first. Meanwhile, we trust that sound design and workmanship have not been sacrificed to speed, and, for instance, that the arch bridges, one of which is illustrated, will be adequately protected on their flanks by wing or return walls, or by heavy stone pitching. In such a climate, too-close attention cannot be paid to catchwater and other drainage. Even where rainfall was considerably lighter, we remember seeing a newly-constructed 40 ft. embankment subside 10 ft. under the weight of a ballast train, the berms on each side heaving up correspondingly. Such precautions and experiences are all in the day's work, but we hope that too much trouble is not in store for the maintenance engineers.

	Four weeks to June 18		Incr. or decr.	Aggregate to June 18		Incr. or decr.
	1950	1949		1950	1949	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers	9,397	9,908	- 511	44,350	46,926	-2,576
Parcels, etc., by passenger train	2,435	2,343	+ 92	13,253	12,994	+ 259
Merchandise & livestock	6,819	6,239	+ 580	38,479	38,463	+ 16
Minerals	2,512	2,259	+ 253	14,388	13,853	+ 535
Coal & coke	6,135	5,282	+ 853	33,915	32,000	+ 1,915
	27,298	26,031	+ 1,267	144,385	144,236	+ 149
Road Passenger Transport, Provincial and Scottish—						
Buses, coaches & trolleybuses	3,168	2,945	+ 223	15,427	14,874	+ 553
London Transport—						
Railways	1,081	1,108	- 27	6,617	6,719	- 102
Buses & coaches	2,498	2,536	- 38	14,120	14,350	- 230
Trolleybuses & trams	828	867	- 39	4,909	5,059	- 150
	4,407	4,511	- 104	25,646	26,128	- 482
Inland Waterways—						
Tolls	63	52	+ 11	332	321	+ 11
Freight charges, etc.	68	63	+ 5	384	388	- 4
	131	115	+ 16	716	709	+ 7
Total	35,004	33,602	+ 1,402	186,174	185,947	+ 227

For the aggregate of 24 weeks, the rise in rail freight rates has brought British Railways total receipts slightly over the 1950 figure; here again coal traffic shows the chief increase. Passenger receipts also fell by some 5 per cent., and London Transport railways traffic by 1.5 per cent. (though that Executive's buses and coaches show a similar decrease). In inland waterways receipts the rise was very small.

For almost half of this year the Commission's total

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Railway Efficiency

July 1

SIR,—Under the heading of "Railway Efficiency," you published in your issues of April 14 and May 19 letters which showed the futility of comparing the operating results of British Railways with the pre-war statistics of the old companies.

The subsequent correspondence has drifted away from the point at issue, but it would be interesting to have proof of the statement, which "B.J." makes in your June 30 issue, that density of traffic is greater in this country than in the States.

The figures of originating tonnage and route-mileage given in his letter do not carry us very far; and perhaps he will be kind enough to show in detail how he arrives at his conclusion.

Yours faithfully,

R. BELL

Frognaal, N.W.3

June 26

SIR,—In your June 23 issue, Major Richard Thomas is very kind to come to my aid. I fear that his revised figure is not accurate. The figures of 1,053 and 1,400 were not tons, as he states, but net ton-miles per train engine hour, a composite figure of which tons is only one factor.

If the tonnage figure in the statistic is equated to short tons before multiplying by the mileage and dividing by the train engine-hours, it will be found that the figure of 1,053 becomes approximately 1,400 net short-ton-miles per train engine-hour.

I will not attempt to follow him in the conclusions he draws from his unhappy experiences in the misinterpretation of operating statistics, except to suggest that the very limited categories in which he places critics are likely to put him in a difficulty in placing himself in one or other of the only two categories he defines, at any rate *vis-à-vis* his own comments discussed above.

Yours faithfully,

FREDERICK SMITH

65, Hallowell Road, Northwood

Closing Scottish Branches

June 24

SIR,—I have recently returned from a holiday in Scotland, and have been disturbed to observe the decline in branch line services. To all who wish railways to regain the high regard in which the former companies were held by the travelling public, this state of affairs is tragic, and it is to be hoped that energetic action will be taken before it is too late.

Fife is stated to be the main coal-producing area of the future in Scotland, yet, apart from the two main lines traversing it, the various branch lines are not carrying traffic to anything like their maximum capacity. Passenger train services were withdrawn on the Mawcarse-Ladybank branch on June 5, and despite strenuous local opposition, services are stated to be withdrawn from the North of Fife branch, early next month. It now becomes a matter of some difficulty to make a journey in an east-west direction, for example, St. Andrews-Kinross or St. Andrews-Perth.

There are definite trends of traffic between the points Leven-Kirkcaldy, Kirkcaldy-Dunfermline and Leven-Perth, yet the greater volume appears to be carried by bus, probably because they offer a direct journey.

St. Andrews, being a University town, offers considerable traffic, but suffers from the disadvantage that many trains terminate at the main-line junction of Leuchars, a five-mile journey. I feel that it would be worthwhile to run a restricted Sunday service to St. Andrews during the summer to cater for day trippers, who must at present use the overcrowded buses.

I appreciate that there are many difficulties and that possibly a certain amount of traffic can never be recaptured, but surely it is worthwhile to give measures to regain the remaining traffic now lost to other means of transport a fair trial?

If it were possible to construct "Chislehurst loops" or spurs at junctions such as Thornton, direct services could be given between towns without change of train, one of the main advantages of road transport at present. On the more rural branches diesel railcars of the centre gangway type with or without trailer coach, might be more economically used in place of the standard steam train. Tickets could be sold on the train, and booking office staff at intermediate stations would not be required.

Finally, though there has been a welcome appearance of "B1" locomotives on the Fife Coast branch, if more modern tank locomotives could be spared for other branches, it would benefit services generally in more rapid acceleration and sustained higher speeds.

Certain East Scottish newspapers have recently campaigned against rail closures, from the transport users' point of view. If the suggestions I have put forward are not practicable, I am convinced other drastic measures are necessary to stop this decline.

Yours faithfully,

DOUGLAS A. BROWN

21, Ellenbrook Lane, Hatfield

Limitation of Railway Speeds

June 28

SIR,—I am sorry that, having reached agreement with me on one point, Mr. Jacobsohn should disagree on another. It is not that I oppose improving passenger comfort, but I question the economic validity of substituting "rooms" for compartments. Appreciating restaurant and sleeping facilities, I nevertheless wonder whether these minimum standards are profitable. Their existence may dictate the choice of travel for some, but does a 28-berth sleeper between London and Edinburgh earning a surcharge of 11s. 8d. a berth, contribute as much towards the cost of conveyance as a 56-seater earning the bare 80s. 7d. per passenger? Obviously not, and the latter has only to be carrying 33 passengers to be earning more.

From an operating viewpoint, is an increase in tare weight per passenger compatible with a higher speed policy? Failing startling developments in motive-power performance, shorter trains must accompany any serious acceleration. We may rely on the reduced section occupation to provide the additional paths required, but to make further demands on line capacity or to extend so unnecessarily the demand for individual power units would soon endanger the economies inherent in higher speeds.

Is it not dangerous to allege, without qualification, that passenger trains are running well below their load capacity? Undoubtedly some trains are poorly patronised, but I imagine that the trains to be in the higher-speed groups would be the counterparts for those trains on which today it is well-nigh impossible to secure a seat, in the third class at least.

I agree that speed and comfort together may decide the means, but the sovereign arbiter is cost, and because I believe that lower cost and higher speed go hand in hand, I repeat my plea for faster trains. We may well ask at this stage, if, in a period of full employment, a high level of industrial activity, and holidays with pay for most people, the railways continue to lose business, what fate awaits them in the event of an economic blizzard?

Unless the price of rail transport is brought down, in spite of the cry that railway charges have not risen

in the same ratio as their costs or the charges in other industries, then they will not only be doomed in the lean years that may follow—they are doomed now. Let us therefore not spoil the chances of reducing or at least keeping costs down by increasing the amount of dead-weight hauled. If we must have more room for exercise why not, in the words of my Great Eastern suburban friends, take out the seats and let everybody stand?

Yours faithfully,

GEO. F. THOMLINSON

56, Stockens Green, Knebworth

Dual Voltage Inter-Running

June 26

SIR.—In an article in your June 16 issue you deal with the problem of dual voltage inter-running on 600 V. and 1,500 V.d.c. and the difficulties that may be encountered thereby. It may therefore interest your readers to know that the narrow-gauge (891 mm.) Stockholm-Roslagens railway has practised this kind of operation for some nine years after the electrification of its Stockholm-Rimbo main line on 1,500 V.d.c.

The suburban system was electrified at 600 V.d.c. in the late 1890's in co-operation, among others, with the British firm of Mather & Platt; and the main-line trains have to

pass over the suburban system to reach Stockholm. A dead section was made outside the suburban district, and arrangements were made to disconnect the motors and motor generators quickly when running over this section which also contained an earthed portion. The main-line trains could thus pass the boundary at full speed and potential relays automatically set up the correct motor combination for the voltage of the section on to which the train was passing.

Later, the suburban rolling stock had to be replaced, and the whole system was then changed overnight on June 1, 1946, to 1,500 V.d.c., but until then the dual system had worked entirely satisfactory and without mishap.

H. OVERHOLM

A.S.E.A., Västerås, Sweden

Train Announcers

June 16

SIR.—With reference to the letter in your issue of today, has not the time come to abolish train announcers altogether? They were useful during the war, but today the constant shouting, whether by men or women, is annoying to the station staff and travelling public alike.

Yours faithfully,

M. COLLINS

Heatherdown, Mortimer

Publications Received

Our Railways in Verse for Young and Old. By Alan Shoults. Illustrated by Euan P. Lloyd. Leicester: Edgar Backus, 46, Cank Street. 7½ in. × 5½ in. 38 pp. Price 2s. 6d.—This book comprises nineteen poetical impressions of the railways, each of which is illustrated by a full-page drawing in three colours. It is likely to make a greater appeal to young persons than those of more mature years.

The London Motor Bus, 1896-1949. By R. W. Kidner. South Godstone, Surrey: The Oakwood Press, Tanglewood. 7½ in. × 4½ in. 44 pp. Illustrated. Paper covers. Price 4s. 6d.—The author of this brochure has set out to tell an independent story without the bias of material prepared by the former Underground Group of companies. The idea is good, but the text is poor, as many dates and statements are inaccurate, and mar the reference value. The half-tone illustrations are well chosen, and of un-hackneyed subjects, and these have their own appeal to the enthusiast.

British Railways Continental Handbook.—In an attractive new cover, the summer edition of the Continental services of British Railways and associated undertakings from and to all British ports contains the usual comprehensive information. New seasonal services include sailings overnight between Southampton and Cherbourg, with rail connections to Nantes and Bordeaux; the Dover-Ostend weekend night service; and the twice-weekly day service between Folkestone and Flushing. There are improved connections with Central Europe by the Harwich to Hook of Holland day service. The pre-war 4.30 p.m. service from Victoria via Boulogne has been revived, with a con-

necting train via Laon to Switzerland and Austria, but there is no connection to Paris by this service. The Laroche-Dijon electrification has contributed to acceleration from and to Calais of the "Rome Express," and of the "Blue Train" and "Azur Express" to the Riviera. For the Channel Islands services, Paddington, despite the transfer of Weymouth to the Southern Region, remains the terminus of the Weymouth boat trains.

Wage Incentive Schemes.—A 26-page pamphlet (price 2s. 6d.), describing the most popular wage-incentive schemes, suggesting methods of introducing and applying them, and emphasising the conditions necessary to their success, is the third of the Personnel Management Series issued by the British Institute of Management; the Institute, however, wishes to make clear that it does not recommend any one scheme; its purpose is simply to provide information on which managers can make their own decisions. The pithy preliminary remarks are probably the best part of the booklet and provide an excellent introduction to the subject.

1899-1949: *Metropolitan-Vickers Electrical Co. Ltd.*—To commemorate its jubilee, of which an account was given in *The Railway Gazette* of July 1, 1949, the Metropolitan-Vickers Electrical Co. Ltd. has published a well produced and illustrated souvenir book. The history of the four decades to 1939, together with the war years and post-war reconversion, is written by John Dummelow. Sir George E. Bailey, Chairman, writes a preface to the book. The many Metrovick products mentioned in this full account include the first electric locomotive of the Metropolitan Railway; multiple-unit coaches for the Mersey Railway;

the first multiple-unit electric trains for the former London & South Western Railway; the earlier electric locomotives for the Great Indian Peninsula and South African Railways; turbines and reduction gears for the turbine-driven locomotive, No. 6202, of the L.M.S.R. in 1935; and recent electric locomotives for the Manchester-Sheffield electrification scheme of British Railways. The present activities of the firm are fully described, with an index of past and present directors and employees.

Imported Timber Prices. As the Timber Development Association has received many requests for copies of the statistical graphs showing comparative prices of imported timber from Russia, Sweden, and Finland, which originally appeared in its *Review* for October, 1948, these graphs, with explanatory text, have been reprinted in leaflet form. The original graphs covered 1920-1947, and supplementary figures for 1948 and 1949 are now included. Copies are obtainable, free of charge, from the Timber Development Association, 75, Cannon Street, London, E.C.4.

Motorcoach Tours Abroad.—The Bavarian Alps, the Tyrol, the Dolomites, and Spain are parts of Europe covered by the 1950 programme of motorcoach tours issued by Thos. Cook & Son. Also included are France, Belgium, Switzerland, and Italy. In some tours the motorcoach meets travellers at the Channel port, whilst in others there is an element of rail travel in Europe before the road tour proper begins; but in all cases the programme is ingeniously contrived to afford the best possible selection of beauty and interest from the great variety that Europe has to offer from April to September.

THE SCRAP HEAP

The Last Word

Lord Latham, Chairman, London Transport Executive, arrived in Paris on June 30 with a silver cup—a tribute from London's Underground to the Paris Metro workers.

But Customs men did not know whether to classify it as a work of art, a drinking vessel or a piece of precious metal. Meanwhile they have confiscated it.—*From the "Daily Graphic."*

Burns at Euston

Scots passing through the great hall at Euston have been studying the wall paintings. They are not enthusiastic about the "Home of Burns," which shows something very light and large, like a room on the movies. Of course, the artist was in difficulties, for there was a large area to be covered.

Just how the birthplace of Burns could be represented truly no one knows. Mountain-ranges fare much better, and bring a breath of air to the Euston Road—which can do with it in June.—*From "The Glasgow Herald."*

Travelling Saleswomen

The North Eastern Region of British Railways now has two travelling saleswomen. Their job is to explain to holidaymakers on trains going to Scarborough the pleasures to be had by using a Yorkshire runabout ticket.

The girls will describe the beauty spots of Yorkshire, explain how the 20s. and 30s. tickets may be used and give details of train services.

If they need a runabout ticket there and then—and 17,000, bringing in £14,000, were sold in Yorkshire last year—then Sheila and Ilma can arrange a spot cash deal!

Canal Moorings Rise

Opposition is being raised to the new standard charges which the Docks & Inland Waterways Executive is levying for laying up or mooring houseboats or pleasure craft.

The new charges are £20 a year for craft of 25 ft. or over if used for residential purposes, and £10 10s. a year for craft under 25 ft. if residential. For a minimum of three months, the charges are £5 5s. or £2 15s. Owners of craft of under 25 ft. which are not residential will pay 12s. a month.

An attempt to arrange a national protest is being made at West Stockwith, near Gainsborough, where there is a large basin providing moorings for craft of all sizes from the Chesterfield Canal, the river Trent, and the river Idle. Pleasure boat owners have no organisation to speak for them.

Representatives of motor-boat organisations are to consider making a protest. In the past a vessel of 25 ft. or over could be moored for 12 months for 38s. 7d. Owners of craft at West Stockwith are proposing to take their craft into open waterways where they can moor, with one rope only, without charge.—*From "The Times."*

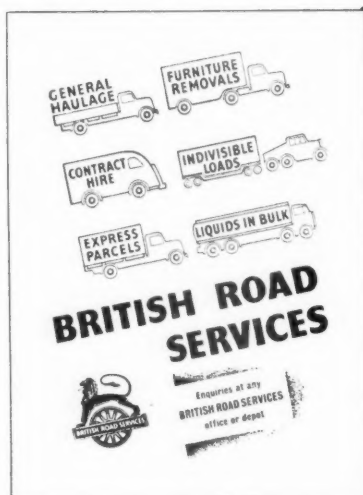
He Saved Money

Water-softening Plant Attendant W. Foster, of Rufford, takes a great interest in his job and his plant is always spick and span. In addition he is always out to cut down expenses, and realising the value of lime sludge as a fertiliser got local farmers interested in the idea of removing 350 tons of it from his plant.

The removal job cost the railways nothing and the farmers were pleased to get the sludge. Mr. Foster's initiative and efficiency have been officially recognised and rewarded jointly by the C.M.E. and the Motive Power Superintendent.—*From London Midland Region Edition, "British Railways Magazine."*

Road Haulage Poster

British Road Services has this year embarked on a campaign of publicising the various kinds of transport facilities it can provide. Different types of advertisements are used for different requirements and below is reproduced one of



a series issued by the Road Haulage Executive for general poster use and as an advertisement for periodicals. For poster work it is produced in three colours.

Southern Region Alliteration

Mr. G. W. Puntis, of Bournemouth, writes that the reference on page 732 of *The Railway Gazette* for June 30 to the sequence of six station names on the Southern Region all beginning with the letter "W" calls to mind a similar sequence of signal box and intermediate block signal names on the up line of the same Region between Winchester and Basingstoke.

In order from Winchester they are: Winchester City (Box), Worthy (Intermediate), Winchester Junction (Box), Wallers (Intermediate), Wallers Ash (Box), Weston (Box), and Warren (Intermediate), a series of seven. This is followed by a break from Michel-

dever to Steventon, with one "W" intervening at Waltham Box, and then a further sequence of three at Wootton (Box), Worting (Box), and Winklebury (Intermediate).

Our correspondent would be interested to know if the first sequence of seven is a record.

Salad Days

Until the end of the season British Railways (London Midland Region) are running a special "lettuces only" express from Glazebrook (Lancashire) to St. Pancras for Covent Garden. The train carries 100,000 lettuces each day.

Fewer Mining Workers

Alarm at the rapid decline in the coalmining labour force is expressed in the annual report of the national executive of the National Union of Mineworkers to be presented to the annual conference of the union next week. Observing that production increased last year in spite of a fall in man-power, the report states that whereas the labour force decreased by 2,500 in the first five months of 1949, it has fallen by 9,100 in the corresponding months of this year.

The executive views with even greater concern the reduction in the number of workers at the coal face. Between January and the end of May this year the number has fallen from 294,000 to 288,000.

Train Types

BAG-Wallahs ALL!

Who are these earnest-featured men
Who throng the trains from nine till ten,
Precise, embowled, gamps full-furled,
Showing a bold front to the world?
Doubtless they handle great affairs
From Westminster to Wapping Stairs.

Bag-wallahs all! They are such fun;
So are their bags—they've each got one;
Some advertising, near and far,
The tasteful monogram "GR,"
Others, more opulent, perhaps,
Bedecked with buckles, locks, and straps.

What secrets in these satchels lurk?
Can they be aught to do with work,
Like contracts, treaties, hush-hush stuff,
Or is it all a bit of bluff?

I have my views. When I was young
I strove to class myself among
The ranks of pundits in the know,
Apostles of the *comme il faut*;
I took work home, but sadly fear
Next morning found it "as you were."

Now, wiser grown, should I indulge
In toting mystery bags that bulge,
You'll be quite happy in your hunch
That, tucked inside, is lunch,
Or "Punch"!

A. B.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Fuel in Bulk

The quantity of petrol, aviation fuel, power paraffin, and so on, conveyed in bulk from the ports, which has increased progressively during the past four or five years, again rose appreciably during 1949 to reach a new record. Despite the considerable increase, the railways succeeded in providing the storage points in the interior with sufficient supplies to enable them to meet the demand. To achieve this, it was frequently necessary to revise and sometimes supplement the train service.

The increasing use of power paraffin in farming has brought about a marked expansion in this traffic, and when the ploughing season was in full swing no less than 300,000 gal. of power paraffin a week were conveyed to the Orange Free State alone.

The total of petrol, aviation spirit, power paraffin, and other fuel, conveyed in bulk from the ports was 297,618,000 gal. in 1949, an increase of 34,302,000 gal. on the figure for the previous year.

CANADA

Smoke Abatement

The opening of the new Cote St. Luc freight terminal this month by the Canadian Pacific Railway will reduce by 85 per cent. the smoke from C.P.R. trains and establishments which now pollutes the atmosphere of Montreal. The roundhouses at Hochelaga and Outremont will be closed, and in the new roundhouse, there will be no smoke. The new 37-stall enginehouse will house 35 diesel-

electric locomotives and 140 steam engines. The plant is so equipped that engines after being steamed up will hold their steam pressure in the boiler by means of a pilot valve, and when required for service, will be moved to outgoing shop roads where fires will be built up by spreading coal over the grate area and fired by a special process eliminating excessive black smoke.

ARGENTINA

Derailment of Diesel Express

An accident which might have had much more serious consequences took place on June 16, when the Buenos Aires-Bahia Blanca diesel express, "El Huemul," left the rails on a curve before reaching the town of La Flores, while travelling at nearly 60 m.p.h. The locomotive continued for some 200 yd. off the rails and finally came to rest at the foot of a low embankment facing the direction in which it had come.

There were only four passengers slightly injured of a total of 60, and all of them continued their journey on a relief train which left four hours later. As the track was severely damaged, all traffic was diverted *via* General Belgrano.

New Diesel Locomotives and Stock

At a recent meeting of the National Economic Council, it was resolved to purchase a further 73 diesel-electric locomotives and an unspecified number of wagons in the United States, at a total cost of some U.S. \$20,000,000, \$3,000,000 of which would be covered by barter of Argentine products and

the remainder by a credit arrangement over 7½ years, this being one of the results of discussions between American financial and industrial experts and Dr. Cereijo, who recently visited the United States. Consideration would also be given to the purchase of rails and rolling stock to a total value of £1,400,000. The Minister of Transport, Colonel Castro, stated that preference would be given to the purchase of locomotives, with rails occupying a second place and passenger coaches and goods wagons last.

IRELAND

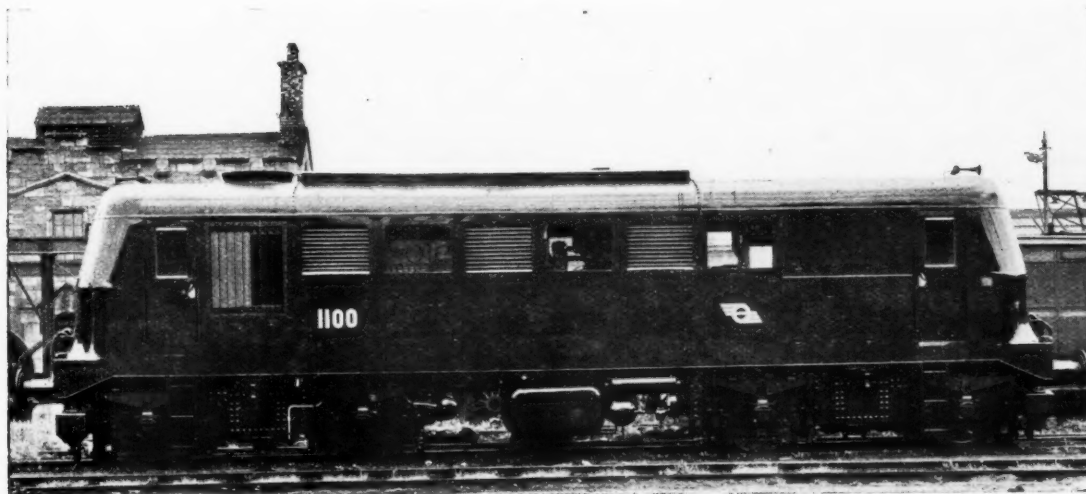
New Rolling Stock and Equipment

The new work programme recently put in hand by Coras Iompair Eireann at Inchicore Works is nearing completion. It includes the building of 150 cattle wagons, 15 brake vans, three travelling Post Office vans, four sleeping cars, and hotel equipment.

The 150 cattle wagons are fitted with a standard timber underframe and so are readily convertible to either open or covered wagons. Welded construction of steel details was introduced where possible. A feature of the 20-ton brake vans was the use of "H" beams instead of the customary channels in the construction of the all-steel underframes. The principal improvement on previous designs is the all-welded steel body. To provide greater comfort for the guard, a timber floor is provided.

The sleeping cars for the traffic department were built by conversion of four third class coaches. The work consisted of completely stripping the

Mixed-Traffic Diesel Locomotive in Ireland



One of two diesel-electric locomotives powered by Sulzer 915-b.h.p. engines recently placed in service by Coras Iompair Eireann

interior and re-constructing to form cubicles affording sleeping accommodation for ten men. Cubicles are fitted at both ends of the coach and all bunks contain spring mattresses. The centre portion of the car is fitted as a kitchen, with presses for essential cooking utensils. Wash basins and personal lockers are provided along the sides.

The travelling Post Office vans have been built by the conversion of two bogie composites and one bogie third. The conversion involved the removal of the entire interior of the coaches and the fitting of complete new side framing. The overall length of 45 ft. and other outside dimensions remain unaltered. Interior fittings, including wardrobe, sorting letter and parcel racks, roll-top desk for registered mail, sliding doors, and toilet for staff were designed and manufactured in the wagon shop, where conversion was carried out. A net apparatus for receiving mailbags while the train is in motion, supplied by the Post Office authorities, is also fitted.

ITALY

New Line in the South

A railway project in the south of some 90 years standing, having been evolved by the Bourbon government of Naples in 1860, has at last been approved by the present government, and is about to be carried out. It concerns a standard-gauge line, some 45½ miles long, to connect the Battipaglia main line in the south with a secondary standard-gauge line between Rocchetta Sant'Antonio and Avellino in the north. The latter line, about 74 miles long, forms part of the intricate system of secondary lines in the mountain region east of Naples, centrally between Naples and Bari, and south of the Naples-Foggia main line.

The Battipaglia main line in the south links the Naples-Reggio Calabria main line in the west with the Reggio Calabria-Metaponto-Taranto main line along the Ionian coast in the east. It leaves from the Naples-Reggio Calabria main line at Battipaglia, 46 miles south of Naples, and joins the Reggio Calabria-Taranto main line at Metaponto, 27½ miles west of Taranto. There is electric traction on the Naples-Battipaglia-Reggio Calabria main line, but the Battipaglia line is steam-worked.

The new railway will leave the Battipaglia-Metaponto-Taranto main line at Eboli, 3½ miles east of Battipaglia, and will rise northeastwards through the Sele valley to reach Calitri-Pescopagano on the Rocchetta Sant'Antonio-Avellino line, 19½ miles west of Rocchetta, at an altitude of 1,207 ft. as against an altitude of 285 ft. at Eboli. There is local friction as some interests would prefer the junction to be at Conza-Andretta, 6½ miles west of Calitri-Pescopagano, at an altitude of 1,378 ft., while others press for the junction to be diverted to Lioni, 8 miles to the west of Conza-Andretta, and still higher, at 1,745 ft. The Lioni junction is urged by Sant'Angelo dei Lombardi,

the main centre in the region, some 1½ miles west of Lioni.

Because of geographical reasons, the junction cannot be made at Sant'Angelo dei Lombardi itself. Some envisage the possibility of the new railway having two junctions with the Rocchetta Sant'Antonio-Avellino line, one at Calitri-Pescopagano, as foreseen by the original scheme, and the other at Lioni. The new line, located in mountainous territory, will be costly, but the expenditure, envisaged at some 12,000 million lire, approximately £6,768,000, is to come from E.R.P. funds, and to be spread over four years.

FRANCE

Rolling Stock Exhibition

Under the auspices of the International Union of Railways an exhibition of railway rolling stock of the latest types, organised by the S.N.C.F., was held in Paris at the Gare des Invalides from May 26 to June 4. Admission was free and the public was allowed to visit the interiors of all the exhibits. The first exhibits were a light 17-tonne railcar, with 150-h.p. diesel engine and four-axle trailer, and the F.N.C. 90-h.p. diesel-driven car and two-axle trailer.

Two lightweight corridor coaches, second and first class, attracted attention. The second class coach comprises nine compartments, each seating eight passengers by day. At night, each compartment is convertible into six sleeping berths. The berths are folded up for day travel to form the walls of the compartment. The first class coach is fitted with movable seats which can be extended in the form of a *chaise-longue*. Another light coach was the Michelin on pneumatic tyres. It has a first class compartment to seat 25 and a bar with seats and small tables. The five-axle Michelin chassis was shown separately.

Two locomotives for hauling heavy expresses on view were the three-cylinder 4-8-4 "A.I." and the compound four-cylinder 4-6-4 "U.I." classes. The diesel-electric 0-6-0 "DA" was shown with sides cut away to make the interior visible. Electric locomotives included the BB 8142, BBB 6002, CC 7002, and the 2-D-2 9104.

WESTERN GERMANY

Additional Railcar Services

Operation of high-speed long-distance railcar services is to be extended from October 8 on introduction of the winter timetable, when reconstruction of pre-war diesel railcars will be completed. The first of twelve further high-speed railcars, now building, will not be available this year; these are experimental units incorporating a number of novel features, such as 800-h.p. engines, hydraulic and hydraulic-mechanical transmission, and a new type of bogie. Similar units capable of attaining speeds up to 100 and 124 m.p.h., are being evolved. The track will have to be relaid to withstand these speeds; it is not

thought therefore that these high-speed railcars will be in service for some time.

A new type of accumulator railcar was recently completed at Munich for service in the Hanover district, mainly to improve interurban connections and seasonal facilities for certain spas.

Fast Fish Traffic

Kirchweyhe, on the Bremen-Osnabrück main line, 9½ miles south of Bremen main station, has become the central point of the fish traffic on the Federal Railways. On an average, 130 fish vans are concentrated daily at Kirchweyhe from the fishing ports north of Bremen, Hamburg and Emden, and redirected by special fast trains to the main consuming centres in the interior. Other particulars of this fast fish traffic were published in the August 19, 1949, issue.

BELGIUM

Accounts for 1949

The working receipts of the National Railways in 1949 were fr. 7,776 million, compared with fr. 8,166,900,000 in 1948. Working expenditure, at fr. 10,578 million, was fr. 262,300,000 higher than that of 1948. The deficit of fr. 2,802 million will be taken over by the State. In 1948, the State subsidy amounted to fr. 2,350 million.

DENMARK

Excursion Trains to Bavaria

The State Railways now operate weekly excursion trains between Copenhagen and other towns in Denmark, and Oberammergau and Garmisch-Partenkirchen (Bavaria), in connection with the Passion play at Oberammergau. These trains will run throughout the summer until September 3.

CZECHOSLOVAKIA

Trains in Transit Through Poland

In accordance with the provisions of a Czechoslovak-Polish railway agreement, Czechoslovak trains now operate through Polish territory on a section of the standard-gauge line from Olomouc, northern Moravia, to Krnov, via Hanusovice. The line, 110½ miles long, enters Polish territory to the north-east of Mikulovice, 82 miles from Olomouc. Near Mikulovice it connects with the Polish railway system at Glucholazy Zdroj, terminus of a line from Opole in Polish Silesia.

From Glucholazy Zdroj the line continues in Polish territory for about 12 miles, re-entering Czechoslovak territory near Jindrichov ve Slezsku, 14½ miles north-west of Krnov. Five Czechoslovak trains a day in either direction, including a fast train each way, operate non-stop over the Polish section of the line. In addition to these ten daily trains in transit there is one Czechoslovak train a day each way between Mikulovice and Glucholazy, for local traffic.

Radio Installations for Shunting Control

Operations in an important Swiss yard are now directed by radio

(By a Correspondent)

IN the past two or three years there has been a great increase in the variety of services using radio as a link between a fixed headquarters and mobile outstations. Electricity and gas undertakings, docks and harbour authorities, and taxi fleets are examples of the types of activity for which a radio link is already an accepted feature of organisation.

At first sight, it might appear that railways have been less adventurous in exploiting this new facility, as its use is still confined mostly to marshalling yards, but consideration shows that in all the installations mentioned the function of radio is the same, namely, to pass instructions to members of the staff whose duties require them to be dispersed over a considerable area. This is the situation which in railway operating exists most commonly at large yards and stations.

Extensive use of radio in the United States for communication with shunting locomotives has been followed by a number of installations in Great Britain and on the Continent. Also, radio telephone service on passenger trains in the United States was described in an article in our August 29, 1947, issue.

Installation at Lucerne

A recent example is at Lucerne, where Radiovox V.H.F. equipment has been fitted to four electric shunting locomotives and also in the main signal box.

The principal purpose of the Lucerne installation is to improve shunting operations at this busy station, where the number of scheduled trains has increased by 60 per cent. during the last 20 years. Intensive occupation of the single-track lines converging on the ter-

minus limits the time available for shunting movements. This calls for instant availability of the shunting locomotives, which was hard to achieve with conventional methods of conveying instructions from the foreman shunter to the drivers and yard staff.

Under the new system the foreman shunter remains in the signal box, where he is in touch with all train movements, and can use radio to summon any of the four shunting locomotives under his control. The locomotives are equipped with ordinary telephone type handsets stowed in weather-proof boxes adjacent to the end platforms used by the yard shunting staff. A horn is sounded on the locomotive when a call is received from the signal box.

Details of the equipment were given recently in *Technische Rundschau*. The apparatus works in the 15 to 30 Mc/s band and uses frequency modulation. A short vertical aerial is mounted on one end of the locomotive body; and as the ends are sloping and lower than the central cab, there is no infringement of the loading gauge. In this connection it may be recalled that the Eastern Region installation at Whitemoor (described in our March 25, 1949, issue), which operates in the region of 85 Mc/s, had to use horizontal roof aerials because the contours of the diesel-electric shunters were such that a vertical mounting position within the loading gauge would have suffered from screening.

The signal box transmitter in the Lucerne installation uses a selective calling device so that the warning horn sounds only on the locomotive for which the foreman shunter has a message. Two transmission frequencies are

used, one by the fixed station and the other by the locomotives. All the locomotive receivers are tuned to the signal box transmitter frequency, so that they can hear all messages proceeding from there and can reply when necessary, but the locomotive crews are unable to exchange messages among themselves because their transmitters work on a frequency different from that of their receivers.

Power for the locomotive equipment is supplied from the battery through a rotary transformer. The apparatus case is at one side of the locomotive, under one of the sloping body ends, and is accessible from outside through doors provided for the purpose.

British Practice

In this country it is likely that higher frequencies than that used at Lucerne will be adopted for future installations in view of the allocation of frequencies of 156 to 184 Mc/s. for commercial purposes.

An equipment designed for this band by the Plessey Co. Ltd. was described in our February 17 issue on the occasion of a demonstration in a diesel shunting locomotive at Willesden, London Midland Region. Both this equipment and the G.E.C. transmitter and receiver described in our May 12 issue can be arranged for selective calling of a large number of stations, the figures quoted in the articles concerned being from 70 to 90 with a two-digit dialling system. Such a number would be more than adequate for railway purposes considering the relatively limited area over which communication on these very high frequencies is effective unless there are special relay arrangements.

NEW BASIS FOR MEASURING VOLUME OF TRADE.—The Government has decided to use the year 1947 instead of 1948 as the base year of index numbers of the volume of United Kingdom imports and exports published quarterly in the *Board of Trade Journal*. The volume of our export trade overtook the pre-war level in 1947 and achieved a 40 per cent. increase between 1947 and 1949. The new index should therefore enable a more realistic appreciation to be formed of current changes in the volume of overseas trade than was possible with the former index.

BRITISH GOODS VEHICLE FLEET.—Details of the motor goods vehicle fleet in Britain at the end of 1949, excluding vehicles operated by the British Transport Commission, are given in the summary of the annual reports of the licensing authorities for goods vehicles for the period October 1, 1948, to September 30, 1949, issued by H.M. Stationery Office, price 1s. The number of vehicles authorised under "C" licences continued to increase and a substantial proportion of the additional vehicles were light vehicles acquired for

the service of small businesses and light industries. The reports record a sharp decline from a peak of over 5,000 to an average of 400 a month in the number of applications for "C" licences for dual-purpose vehicles following the issue in November, 1948, of the regulations transferring the majority of these types of vehicles to white petrol fuelling.

ELECTRICITY AS AN AID TO PRODUCTIVITY.—On November 15 and 16 the utilisation section of the Institution of Electrical Engineers is holding a conference to make available to industry in general the most up-to-date information concerning the contribution that factory electrification can make towards increased production. The conference is intended mainly for executives in both large and small factories who are responsible for production and will consist of a series of lectures each of which will be followed by a general discussion. It has been planned as far as possible from the point of view of the user, and the lectures will, therefore, cover in general terms what electricity can do to increase production,

rather than give full technical details of the apparatus with which these improvements can be achieved. The proceedings will be published in due course.

CONTRACTS PLACED FOR NEW COLLIERY RAILWAY.—The Railway Executive announces that the following contracts have so far been placed for the construction of a branch railway, about 7 miles long, from near Hucknall, Notts., to serve the National Coal Board colliery at Calverton, near Nottingham:—Earthworks, bridges, culverts, and general works, Fletcher & Co. (Contractors) Ltd., Mansfield; steelwork for three bridges, the Butterley Co. Ltd.; fencing, J. B. Corrie & Co. Ltd., Victoria Street, London, S.W.1. The scheme was originally negotiated between the former L.M.S.R. and L.N.E.R. and B.A. Collieries Limited, and before nationalisation the L.M.S.R. had obtained Parliamentary powers to construct the line. It will be double track and capable of carrying the total output of the colliery of over 1,000,000 tons of coal traffic annually. Work is expected to be completed before the end of 1951.

The Assam Rail Link Construction

To avoid passing through Eastern Pakistan, 142 miles of new line through difficult country have been speedily constructed to join Assam with the rest of India

(By a Correspondent)

WITH Partition of the Indian sub-continent into the Dominions of India and Pakistan, the Indian province of Assam ceased to have direct rail connection with the rest of that Dominion except through Pakistani territory. The construction of a new rail link on Indian soil throughout was therefore considered essential for political, strategic and commercial reasons.

Orders were issued on January 27, 1948, for the construction to begin. Rapid air and ground reconnaissances showed that the country to be traversed consisted largely of dense forests and that many rivers and streams debouching from the Himalayan foothills would have to be crossed. It was decided that the work should be divided into the four following sections:—

Section 1: Kishanganj to Siliguri, involving the replacement of the existing 66-mile 2-ft.-gauge Darjeeling Himalayan Extension Railway between these points by a metre-gauge line. This entailed not merely the conversion of the gauge, but practically a new construction, because much of the narrow-gauge line had been laid like a tramway on the berm of a road, and else-

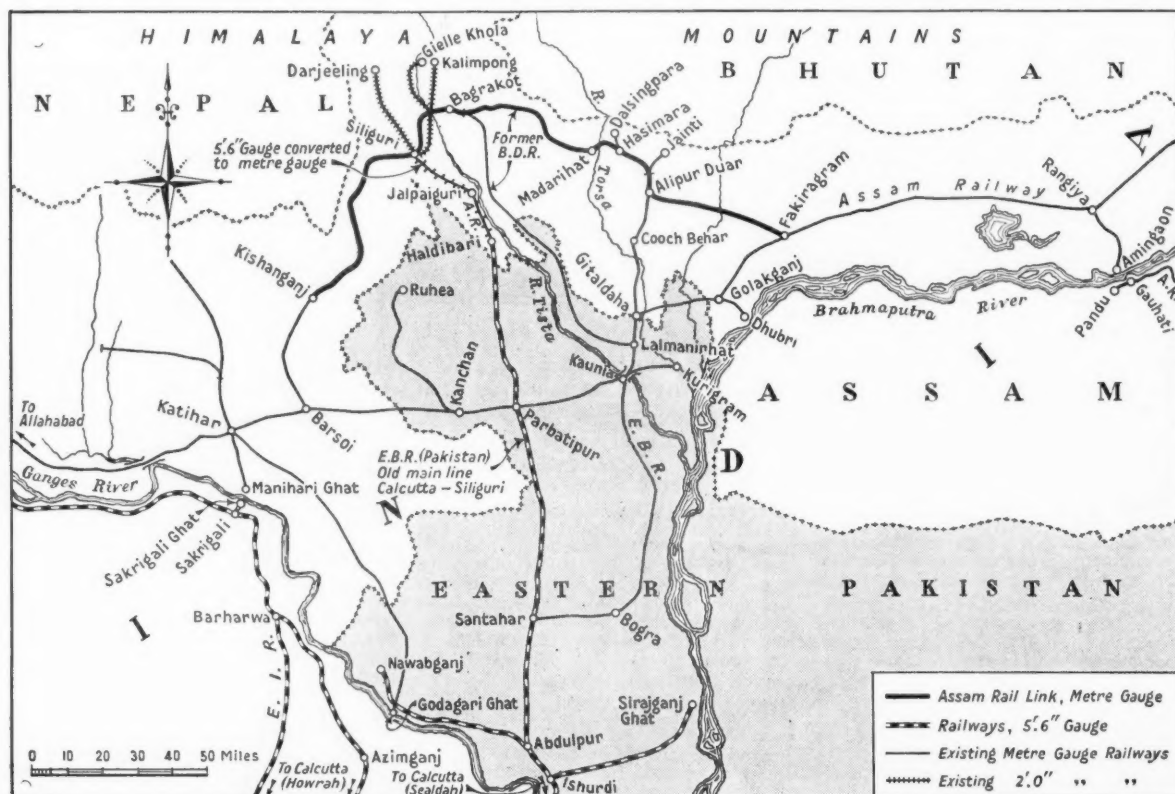
where the formation, bridges and other structures had largely to be rebuilt.

Section 2: Siliguri to Bagrakot, a new 22-mile construction to connect Siliguri with Bagrakot, the western terminus of the metre-gauge Bengal-Dooars section of the former Bengal-Assam Railway. This section of the new construction runs along at the foot of the Himalayas, and the main problem was the bridging of the Tista River and other fast-flowing mountain torrents; there are 100 bridges and culverts in these 22 miles of construction. By selecting a crossing of the Tista only 700 yards below the mouth of the 300-ft. wide gorge through which the river leaves the hills, a bridge consisting of a central 250-ft. span flanked by two of 150 ft. on each side of it was possible. Deep cuttings and high banks involved heavy earthwork on this section. The existing line that was a branch of the former Bengal-Dooars Railway from Bagrakot to Madarihat forms the next link in the new through route.

Section 3: Madarihat to Hasimara, an 8½-mile length of new construction connecting the eastern terminus of the Bengal-Dooars branch with Hasimara

on the Gitaldaha-Dalsingpara or Cooch Behar metre-gauge branch of the former Bengal-Assam Railway. Though this gap between the two existing lines was so short, it had previously remained unbridged due to the difficulty of crossing the formidable Torsa. This river rises far away northwards in Tibet, and its bridging was not considered practical or justified by the light traffic hitherto offering. The bridge now built consists of nine spans each 150 ft. long. The new route next follows the existing line from Hasimara as far as Alipur Duar.

Section 4: Alipur Duar to Fakiragram, the final 45-mile section of new construction. Here again it would have been possible to avoid building this section had the existing rail route between these stations not passed through Pakistani territory for eight miles near Pateswari, on the Gitaldaha-Golakganj section of the old Bengal-Assam Railway main line to Assam. Incidentally, the new line about halves the distance between Alipur Duar and Fakiragram as compared with the old route via Gitaldaha and Golakganj. The middle five miles of Section 4 are in Cooch Behar



The Assam Rail Link route



Culvert in high bank consisting of eight 10-ft. dia. Armco corrugated iron pipes

State, and traverse such dense jungle that it could be penetrated only on foot or by elephant. Near the middle of this section the Sankosh River is crossed by a bridge consisting of six 100-ft. spans.

The new link route thus terminates at Fakirgram, a station on the original Eastern Bengal and later Bengal-Assam metre-gauge main line to Amingaon, on the north bank of the Brahmaputra nearly opposite Gauhati, one of the principal towns in Assam. A wagon ferry plies between Amingaon and Pandu Ghat (Gauhati).

Rapid Work

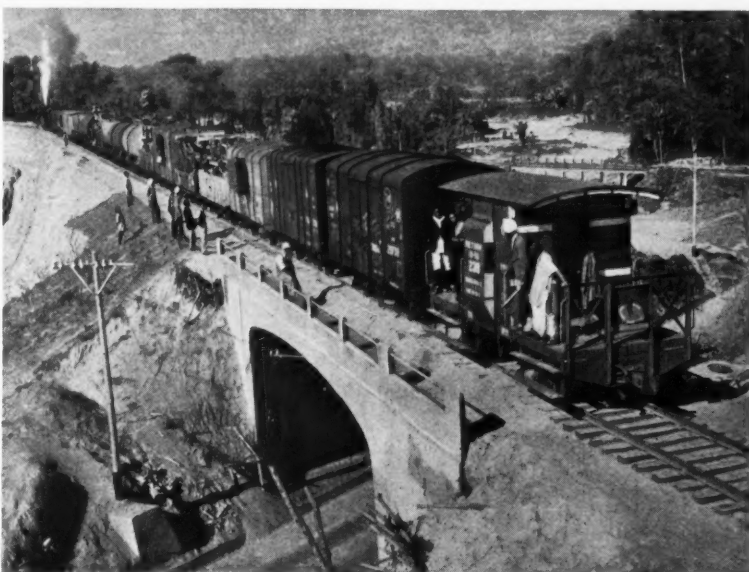
The period for the completion of this 142½-mile length of new construction—including the conversion, Section I—was set at two years, the completion date being April, 1950. This period included two monsoons, which in this area are exceptionally heavy and last for about six months, during which field-work is almost impossible. The working period was therefore only about a year in all.

As the final location survey had yet to be done when construction started in the spring of 1948, little could be achieved before the monsoon broke in that year. Almost all the work had therefore to be done in the few months between the autumn of 1948 and the break of the 1949 monsoon, and in the short time available after that monsoon. This was a remarkably stiff task as, in addition to the three large bridges over the Tista, Torsa and Sankosh, 19 others required deep foundations, and in all 69 foundation wells had to be sunk to an average depth of about 40 ft. in the short 1948-49 working season. Moreover, supervision and the transport of materials was abnormally difficult, as the 368 bridges and culverts built were strung out over a distance of over 300 miles. Furthermore, the

labour force had to be imported several hundred miles from Orissa, Bihar and the United Provinces, and the country traversed is notorious for malaria and blackwater fever. Nevertheless, by excellent planning and sustained hard work, the link was ready for opening for goods traffic on December 9, 1949, and for passenger traffic on January 26, 1950, well ahead of schedule.

The estimated cost was nearly Rs. 8,89,50,000, or in round figures £6½ millions. Some other details related to the work were:—

Earthwork moved...	...	200,000,000 cu. ft.
Concrete poured	3,700,000 "
Steelwork other than rails	...	7,000 tons
Cement used	25,000 "
Materials transported	...	200,000 "
Movement of materials	...	70,030,030 ton-miles



A two-hinged rigid-frame skew concrete arch bridge

For the first time in India a limited number of pre-stressed concrete girder bridges of up to 60-ft. span was built on this construction; the concrete was poured *in situ*. Elsewhere, Indian standard and military type steel girder spans were used. The piers for the large bridges were founded on wells sunk under compressed air to depths of 60 ft. through river beds containing boulders up to 6 ft. in dia. For culverts, Armco corrugated iron pipes up to 12 ft. in dia. were used, in some places in batteries of as many as eight. For buildings, mass-produced hollow concrete blocks were cast.

Subsidiary to the main construction, the Haldibari-Siliguri section of the former broad-gauge Bengal-Assam Railway main line from Sealdah (Calcutta) was rapidly converted to metre gauge in January, 1950. This conversion was the subject of an editorial note in our issue of June 16.

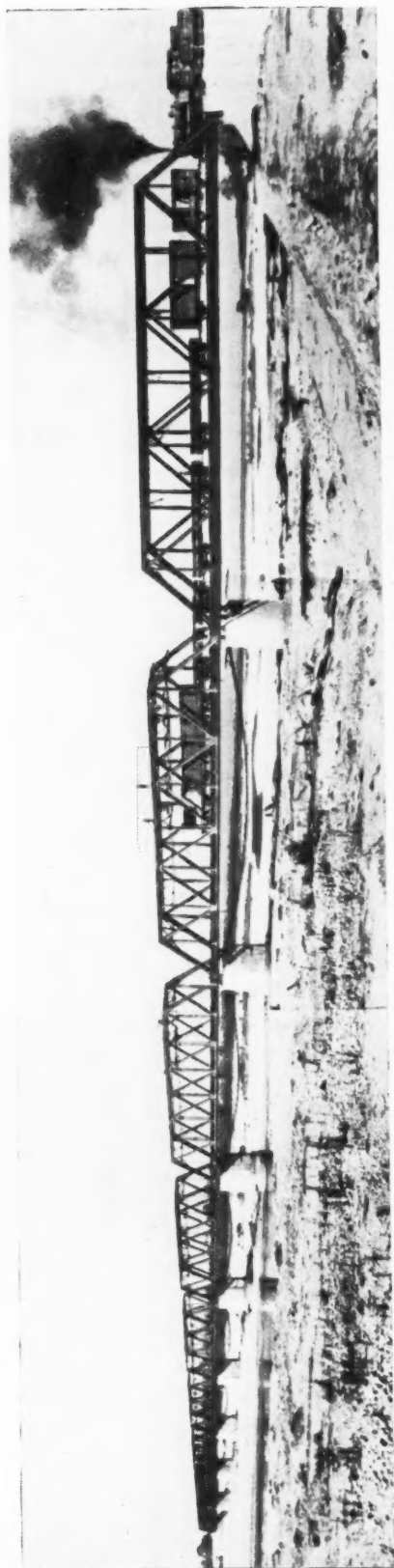
ULSTER PASSENGER SERVICES WITHDRAWN.

—The passenger service on the Limavady Junction to Limavady branch of the former L.M.S.R. (N.C.C.), now worked by the Ulster Transport Authority, was withdrawn on July 3; on the same day the Ballymoney to Ballycastle narrow-gauge section of that system was closed to all traffic.

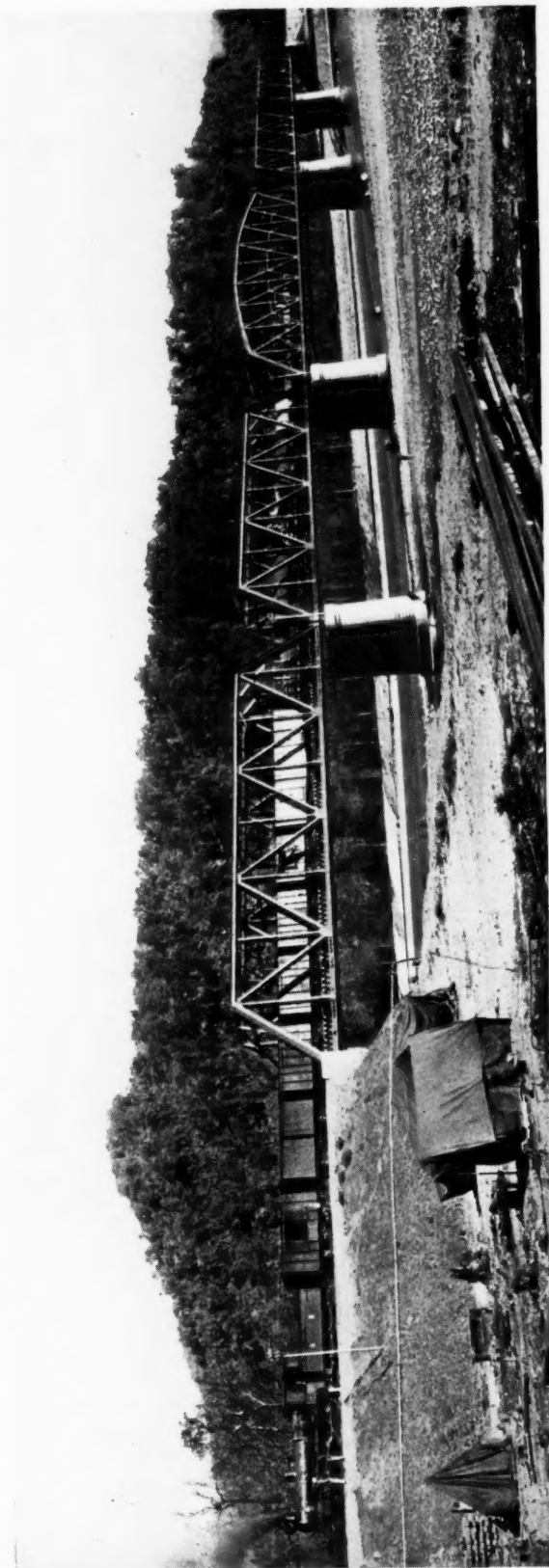
RECORD NUMBER OF U.S.A. TOURIST ARRIVALS.—Over 14,000 American visitors came to Great Britain during May and this number represents a 46 per cent. increase over May of last year. The total number of foreign visitors who arrived during the month was 44,563, which was equivalent to 29 per cent. more than the pre-war average for the month, and 15 per cent. more than for the same period during the previous year. Figures for South America, Italy, Sweden, France, Switzerland, and Belgium all showed increased numbers of tourists.

The Assam Rail Link Construction

(See article on page 12)



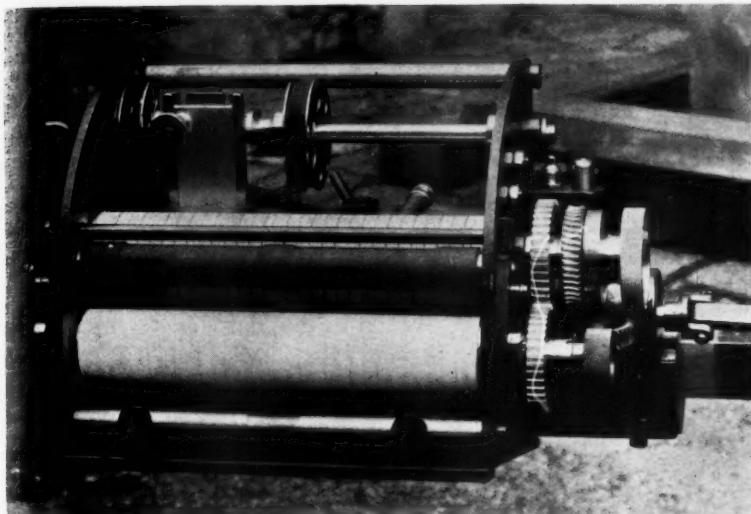
The largest bridge on the new line, over the Torsa river. The monsoon river width is about 1,450 ft., but the cold-weather stream is as shown



The new bridge over the Tista river. Note the typical jungle and topography in the background

Gauge and Cross-Level Track Recorder

Apparatus for the measurement of track width and superelevation



Track width recorder mechanism with the protecting cover removed

AN automatic track recording instrument has recently been developed and produced in Austria which will measure track and gauge and superelevation and at the same time graphically record such measurements. It is being demonstrated to British Railways and it is expected that eventually arrangements will be made for the instrument to be manufactured in Great Britain.

Among the advantages claimed for the instrument is that the railway ad-

ministration has, by a reference to the charts which are maintained as records, a true picture at the time of measuring any section of the track over which the recording instrument has been used; it is also claimed that errors which may arise by individual measuring are avoided.

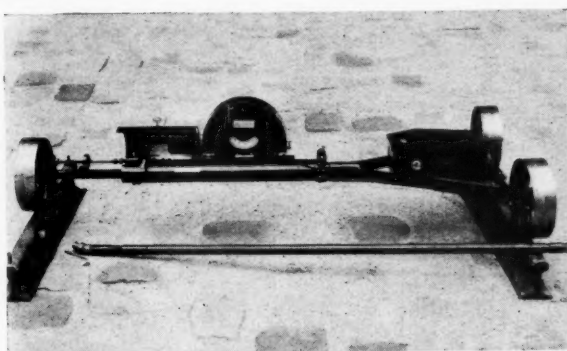
Method of Application

The recorder, known as the Gauge Master P.11, consists of a 3-wheel chassis on to which are built the

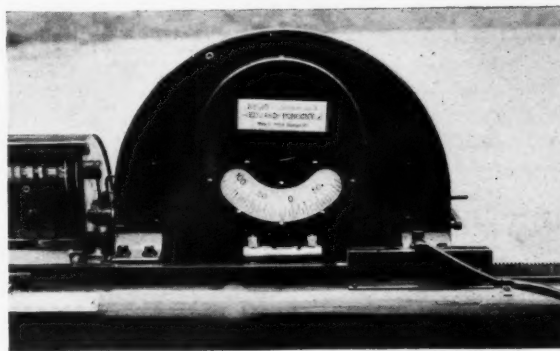
various instruments used for measuring and recording rail track dimensions and superelevation as it is propelled along the track. All measurements are graphically recorded on a registering strip and actual measurements can be read off as they are recorded. Superelevation is shown by an indicator pointer which registers on a scale of 1 to 5, the margins on the strip being numbered.

The instrument is provided with a driving stick for propelling purposes, the single operator walking beside the instrument; a warning bell fitted to the recorder rings when the instrument is passing over a portion of the track where gauge tolerances have been exceeded. Track measurements are obtained by three rollers which extend below the carriage structure and ride on the inside edges of the rails, actuating a series of levers connected to the recording instrument; the rollers can be reversed when showing signs of wear.

To check superelevation it is necessary first to set the pointer or the centre dial to its correct position, an operation which must be carried out while the track recorder is on a level portion; for checking, a spirit level has been fitted to the instrument. When approaching a crossing the guide rod should be turned slightly to the left, and, after passing the point of the crossing, the guide rod should be released, this preventing the guide rollers from entering the inside of the crossing point. The weight of the track recorder is approximately 100 lb.



Showing the assembly of the Gauge Master P.11 recorder



Graduated scale indicator for measuring superelevation

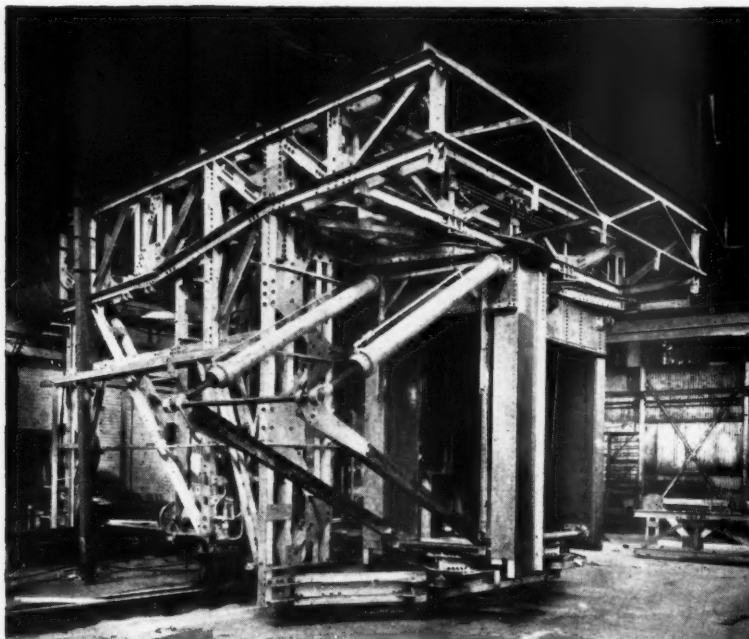
BUSES TO REPLACE RAILWAY SERVICE IN PATAGONIA.—As reported in our June 30 issue, on page 748, the Argentine Ministry of Transport will shortly replace a passenger railway service in Patagonia by buses exported from Britain by Leyland Motors Limited. At present, the buses are operating in the Mendoza district of the Argentine, but the Ministry has decided to

transfer them south, where the need is greater. They will be withdrawn 700 miles to Buenos Aires before they are driven 1,000 miles to their new base, Puerto Madryn. Consisting of eight Leyland diesel coach chassis equipped with Argentine built bodies and supplied to the Ministry by A. G. Pruden & Company, Buenos Aires, the fleet will be assigned to

a service now operated by a mixed goods and passenger train. It runs from Puerto Madryn to Trelew and Dolavon, a 62-mile journey along the Chubut valley, where Welsh immigrants settled during the past century. The train service takes 4½ hours on this journey, but the Leyland buses are scheduled to cover it in considerably less time.

Mechanically-Operated Telescopic Gangways

Fully-enclosed passenger ways are being provided in an extensive Southern Region development scheme at Southampton Docks



Shore station, showing pair of rotating turrets

AMONG the developments taking place at the Southampton Docks of the Southern Region, British Railways, is the erection of a three-storey building 1,200 ft. long, which will, when completed, provide boat-train platforms, customs halls, waiting

rooms, and other amenities. It was necessary to provide gangway links between the first floor of the building and the ship, and the normal type of gangway, which would need to be lifted into position by crane, was not considered suitable for this purpose.

A design was therefore evolved in which the gangways can be extended mechanically to join ship and shore and provide fully enclosed passenger ways for the comfort and convenience of the travellers. Three complete units, consisting of shore stations, each with two telescopic gangways which can be slewed, luffed, extended, and telescoped, have been designed by S.M.D., the development and construction company of the Associated Light Metal Industries Group, a subsidiary of Almin Limited, Farnham Royal, Bucks. The complete units are under construction at the S.M.D. works at Slough.

Gangway Construction and Design

The specification called for a load of 200 lb. per ft. of runway, and for wind loading up to 50 m.p.h. winds. The extended end of the walkways cantilever out 75 ft. clear of the outer supporting rail and, to minimise the load on the shore structure and reduce the size of the operating mechanism, stiffness and lightness in weight were essential. A pair of special extrusions are riveted to form a box construction at the corners, and to ensure ease of attachment of the covering sheets. The side frames are Warren girders consisting of these boxes previously mentioned, joined together by diagonal bracing.

For lightness and rigidity, the floor has been made by means of sandwiching corrugated sheeting between two flat aluminium-alloy sheets top and bottom, connections being made to the top sheets with the crest of the corrugations



Inner and outer gangways, showing construction before sheeting

and the trough being connected to the undersheet, the upper surface being again covered with rubber flooring cemented on, and carrying wooden battens at intervals to ensure a firm foothold at the steepest inclination.

The telescopic motion of the gangway is effected by means of Reynolds chains disposed on each side of the gangway walls and incorporating a Lockheed hydraulic compensating mechanism to ensure a balanced pull.

To reduce the local stresses at the points of contact between the fixed and extending parts of the gangway, a pair of spring-loaded wheels is used, running on a Delaron plastic strip, the springs being loaded to a predetermined figure. The point loads applied by these wheels would become excessive when the gang-

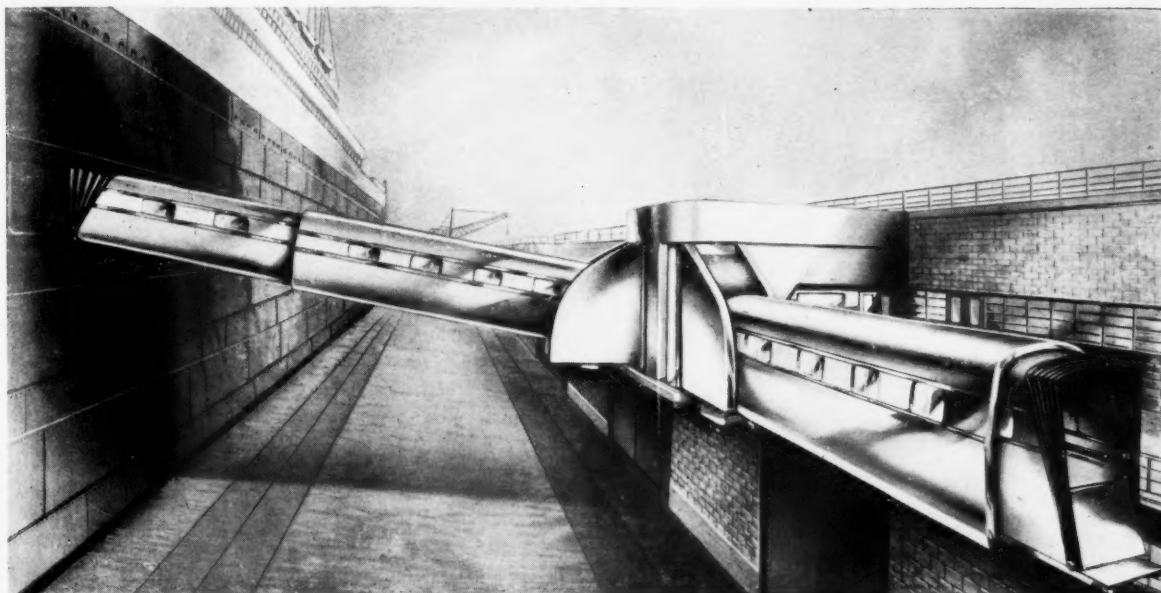
upper part carries the cylinder-end of the hydraulic luffing rams disposed either side of the gangway. A sheet-metal fairing on the turret covers the luffing rams.

Both the upper and lower journal bearings for the turrets are of the self-aligning double-roller type, the upper one having in association with it a thrust-bearing carrying the weight of the turret and gangway. The bearings are mounted in housings attached to the girders of the shore structure. The shore structure is a space frame built up of standard extruded sections joined by gusset plates in an orthodox manner. Two road wheels on the turret side of the structure run on the lower platform rail, and the rear of the structure at its upper part carries rollers which

luffing of the gangways, and the operator can, by looking up the inside of the gangway, make the final adjustments necessary to guide the end to rest on the threshold of the ship's door.

A hook on the outer end makes contact with the ship's shell, and as soon as it comes to rest, the telescoping motion is automatically de-clutched and the oil pressure is by-passed so that the gangway is instantaneously free to move with the ship. Safety alarms are provided in case the maximum extension is approached and to give timely warning to allow for disengagement. The sequence of uncoupling operations is such that only the luffing motion can be used initially.

In disengaging from the ship, as soon as the hook is raised from the side,



Perspective drawing of gangways when completed

way is fully extended and loaded to the design specification with passenger traffic, so at this point the springs allow the wheels to withdraw and pressure pads share the load. The plastic strip was chosen because of its low friction coefficient to provide the smoothest possible telescoping motion.

The turrets transmit the hydraulic motion to the gangways and have necessarily to be of extremely robust construction. The sides are made from plate box-girders of $\frac{1}{2}$ in. material supermounted by a box beam, which carries the journals for the two hydraulic rams which impart the slewing motion, pushing and pulling simultaneously according to the direction of motion.

The top beam also carries the shaft by which the turret is suspended, and which, with another shaft at the base of the turret frame, forms the journals for rotary movement of the turret. The hinge pin on which the gangways are luffed is situated at the base of the turret, and a shaft at the

move along the upper rail. Between the two turrets is mounted the control panel carrying the hydraulic control valves and push button stations. The hydraulic pump units are mounted in the top rear part of the shore structure.

Interlocking Controls

A system of interlocking controls has been devised to ensure the maximum safety of the equipment and the operators. Anchors are provided to lock the mechanism to the quay rail. Until the anchors are secured it is only possible to travel the whole structure along the quay side. No hydraulic motion is possible. Once the anchors are secured a reverse takes place, so that travelling along the quay becomes impossible and power is available to manoeuvre the gangways one at a time. A sight hole in the control panel is provided to ensure correct positioning of the units before making connections with the ship.

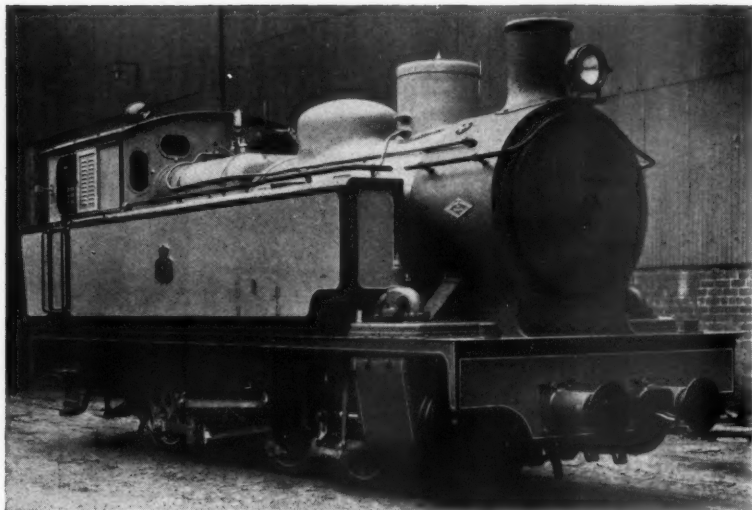
Indicators, visible at the control point, show the amount of slewing and

the gangway must be fully retracted before other motions are possible. The control lever is then held in the "slew in" position and the gangway slews parallel to the quay to its parking position. In taking the gangway out to the ship the obligatory luff-up motion ensures that the end is free of the quay before slewing-out can take place. Hand-rails of hollow box-section are fixed by cast brackets to the sides of the gangways.

The structural sections are manufactured of aluminium-alloy AW10B, the sheeting of aluminium alloy AW5, and the rivets of AW6D. Electric motors, picking up power from a trailing cable with automatic over-extension cut-out, drive the main road wheels through mechanical reduction gearing. The luffing and slewing of the gangways is by means of electro-hydraulic power and the telescoping motion is electro-mechanical through gear boxes and roller chains. The total weight of each unit is 17½ tons.

Tank Locomotives for Spain

North British 0-8-0 tank engines incorporating central drawgear in addition to standard buffers for 4-ft. gauge



RECENTLY completed at the Hyde-park works of the North British Locomotive Co. Ltd., Glasgow, are four 0-8-0 tank locomotives for the Tharsis Sulphur & Copper Co. Ltd., Spain. They are now being dismantled and packed in the finished painted condition for shipment to Huelva. The locomotives, which are somewhat similar to the "F" class built in 1914 for this company, have larger capacity tanks and bunkers, while the boiler mountings and fittings are of modern design. The front and hind buffer beams and drag-boxes have been modified to incorporate a central coupler in addition to the standard side buffers.

The boiler is fitted with a Belpaire firebox and has two barrel rings, 4 ft. 2½ in. outside diameter at the front end, and 4 ft. 3½ in. outside diameter at the throat plate. The distance between the tubeplates is 9 ft. 10½ in. There are 108 small tubes of 1½ in. outside diameter and 15 superheater flue tubes of 5½ in. outside diameter.

A 15-element Melesco superheater is provided and a mushroom pattern regulator is situated in the dome. The copper inner firebox is stayed to the outer box by steel direct roof stays with four rows of sling stays at the front to allow for expansion; the waterspace stays are of copper.

Walschaerts valve gear actuates the 8 in. dia. piston valves and the reversing gear is of the hand-screw type. The cylinders are lubricated by means of a Silvertown eight-feed mechanical lubricator.

The locomotive frames are of steel plates 1½ in. thick, well stayed throughout by steel castings and sections. Axle-box guides of the horn type are provided and the axleboxes are steel castings fitted with gunmetal bushes lined with white metal. Oil lubrication is provided throughout. The laminated bearing springs are underhung and not compensated.

The fittings include two No. 8 R.S.C. injectors, two Gresham & Craven combination valves, two 2 in. dia. Ross pop safety valves, and two sets of water glass gauges. Stone's electric lighting equipment is installed and includes a Tonum R headlight at front and rear of engine as well as cab lights. Steam and hand brakes are fitted.

Principal Dimensions

The principal dimensions of the locomotives are as follow:—

Cylinders, dia. and stroke	...	19 in. x 22 in.
Wheels, dia	...	3 ft. 6 in.
Wheelbase	...	12 ft. 0 in.
Heating surfaces:—		
Tubes	...	690 sq. ft.
Firebox	...	97 sq. ft.
Total evaporative	...	787 sq. ft.
Superheater	...	200 sq. ft.
Total	...	987 sq. ft.
Grate area	...	18 sq. ft.
Boiler pressure	...	160 lb. per sq. in.
Weight of locomotive in working order	...	53 tons 2 cwt.
Tractive force at 85 per cent. boiler pressure	...	25,715 lb.
Water capacity of tanks	...	1,250 gal.
Bunker capacity, coal	...	2-1 tons

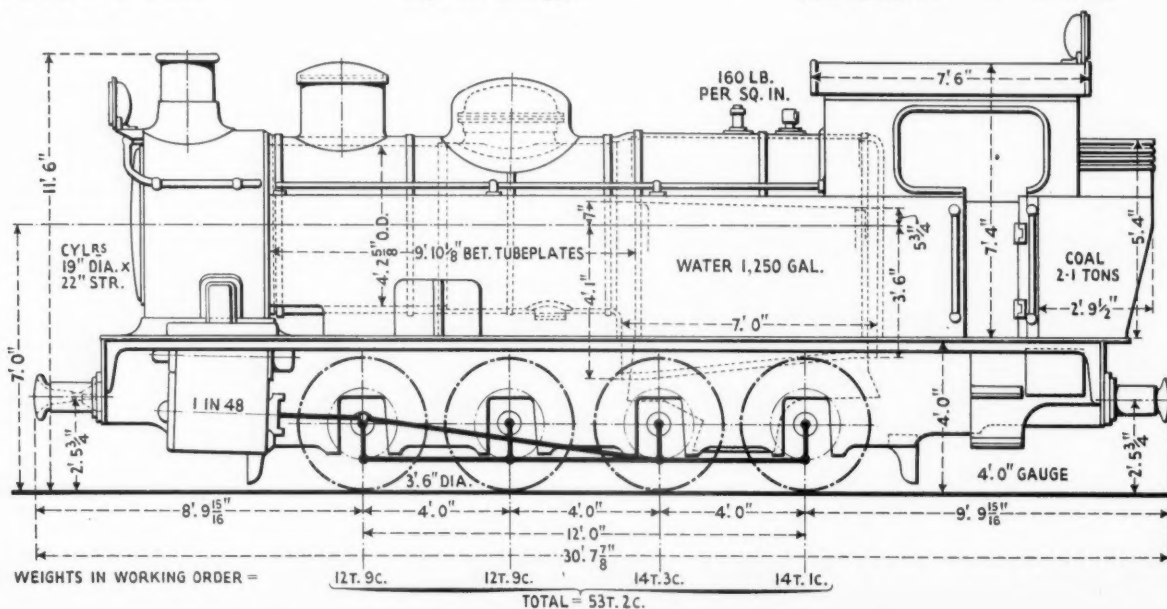


Diagram of the locomotive showing principal weights and dimensions

RAILWAY NEWS SECTION

PERSONAL

The Directors of the Peruvian Corporation Limited have announced that on the resignation of Mr. J. D. Kennedy, they have appointed Mr. H. G. Clark as Secretary from July 1.

British Railways, Eastern Region, has announced that Mr. W. A. G. Suddaby, M.B.E., Assistant District Operating Superintendent, Rotherham, has been appointed District Operating Superintendent, Southend District, Fenchurch Street.

Mr. T. G. Creighton, Director of Mechanical Engineering & Stores, Railway Division, Government of Pakistan, who recently was acting as Director-General of Railways and has been on leave in Great Britain, returned to Pakistan on July 4.

We regret to record the death on June 27, at Klip House, Vereeniging, South Africa, of Commander Maxwell Napier Williamson-Napier, R.N. (retired), Deputy Chairman and Managing Director of Stewarts and Lloyds of South Africa Limited.

Mr. D. S. Thomson, Vice-President of the Canadian Pacific Railway, Eastern Region, Toronto, has been appointed Vice-President, Prairie Region, at Winnipeg. Mr. William Manson, Vice-President at Winnipeg, has been transferred to the Pacific Region, Vancouver, and Mr. George H. Baillie, Vice-President at Vancouver, has moved to the Eastern Region at Toronto.

Mr. L. A. Carter, formerly an assistant in the Rail, Docks & Inland Waterways and Hotels Allocation Section of the Commercial Advertisement Division, Chief Public Relations & Publicity Officer's Department, British Transport Commission, has been appointed Head of that Section, in succession to the late Mr. K. Russell. Before the formation of the Commercial Advertisement Division, Mr. Carter was an assistant in the Trade Advertising Department of British Railways, Western Region.

Mr. J. Cunningham and Mr. R. C. Shepherd have been appointed Directors of Ruston & Hornsby Limited. Mr. Cunningham joined Ruston & Hornsby Limited in 1922, in the Excavator Design Department, gaining experience also in other departments and in India. In 1941 he became General Manager of the Boiler Division and throughout the war was in charge of war material production, for which he was awarded the M.B.E. Mr. R. C. Shepherd joined the firm in 1923 as Chief Metallurgist; in 1932 he was appointed Foundry Manager at Lincoln, and in 1944 General Foundries Manager of all the Lincoln and Grantham Foundries, subsequently studying foundries and kindred subjects in U.S.A. and Germany.

Mr. J. C. Atkinson, who, as recorded in our June 23 issue, has been appointed General Manager of the Jamaica Government Railway, entered the service of the Midland Railway in 1910. He was appointed Traffic Inspector, Jamaica Government Railway, in 1920, later occupying the positions of Chief Clerk, Traffic Branch, and Assistant Traffic Superintendent. In 1938 he was promoted Traffic Superintendent, and in 1943 Traffic

cheque on behalf of the Division, district groups, and depots. Mr. Garrett replied and among other speakers were:— Messrs. J. H. Calvert, District Manager, Peterborough; A. Porter, District Manager, Norwich; D. D. Mynott, District Manager, Colchester; D. H. McVeigh, District Manager, Lincoln.

Mr. H. O. Field has been appointed General Manager of Henry Meadows Limited, Wolverhampton, and has joined the board of the company with effect from July 1.

Mr. Edward Williams has been appointed European Auditor, Canadian National Railways, with headquarters at Orient House, London, E.C.2.

We regret to record the death at Detroit, at the age of 76, of Professor Eliel Saarinen, the American architect, born in Finland, who designed Helsinki Station.

British Railways announce that Mr. H. Bastin, Goods Agent, South Lambeth, Western Region, has been appointed Assistant to Commercial Superintendent (Terminals), Eastern Region.

Colonel A. Prodgers, Controller of Mails & Transport, London Postal Region, has been appointed Public Relations Officer to the General Post Office in succession to Mr. C. J. Miles.

Mr. Alfred Roebuck, has retired from the board of Hadfields Limited, Sheffield. His services as Consultant are being retained by Hadfields Limited, and he will continue to act as a Director of John Baker & Bessemer Limited, Kilnhrust. Mr. Arthur H. Wayne has been appointed a Director of Hadfields Limited.

Mr. Alexander M. Hamilton, Vice-President in charge of foreign sales for the American Locomotive Company, has retired. Mr. Hamilton has also retired as President of American Locomotive Export Company and President of the Steam Locomotive Export Association, Incorporated. He will be succeeded by Mr. Manuel Alonso, who has been appointed Manager of Foreign Sales.

Mr. D. Fenton, who, as recorded in our June 16 issue, has been appointed Assistant District Operating Superintendent, Manchester, British Railways, entered the service of the L.N.E.R. as a traffic apprentice at Glossop in October, 1935, and after completing his training, took up a position in the office of the Passenger Manager, Liverpool Street, London. He served in the Royal Artillery from 1940 to 1946, when he was appointed Assistant Yardmaster at Spitalfields. Subsequently Mr. Fenton has occupied positions in Edinburgh and London, and in 1948 he became Assistant District Operating Superintendent, Lincoln.



Mr. J. C. Atkinson

Appointed General Manager of the Jamaica Government Railway

Manager, which position he held until his appointment as General Manager.

Among those recently elected Members of the Institution of Mechanical Engineers is Mr. Alexander John Leslie Winchester, Assistant to Motive Power Superintendent (General) at Waterloo, British Railways, Southern Region.

After a meeting of the Eastern Divisional management staff of the Road Haulage Executive in Norwich on June 27, Mr. J. B. Garrett, Divisional Manager, who, as recorded in our June 23 issue, has been appointed Chief Officer (Organisation), Road Haulage Executive, entertained a company of 130 to luncheon in Samson & Hercules House. Mr. W. C. Webster, Divisional Staff & Welfare Officer, reminded those present that in two years Mr. Garrett had built up the Eastern Division, which now employed something like 6,000 persons, with nearly 4,000 vehicles, and presented him with a



Dr. Gerardo Sileo

Appointed Chief Accountant, D.F.,
Sarmiento Railway, Argentina



Mr. J. F. Terenzi

Appointed Chief of Traffic Department,
General Urquiza Railway, Argentina



Sardar Karnail Singh

Engineer-in-Chief, the Assam
Rail Link Project

Dr. Gerardo Sileo, who has recently been appointed Chief Accountant, D.F. Sarmiento Railway, was born in 1913, and joined the Chief Accountant's Department of the Buenos Ayres Great Southern Railway in 1928. After gaining experience in the passenger, goods, refreshment, and mechanical accounting sections, he went to the General Accounts Division, where he was required to make a special investigation of problems connected with different aspects of the cash and commercial sections. On the separation of the joint administration of the Buenos Ayres Great Southern and Buenos Ayres Western Railways, Dr. Sileo was assigned to the B.A.W.R., where he became Chief Accountant. Dr. Sileo received his commercial diploma as "Perito Mercantil" in 1932, and subsequently entered the Faculty of Economic Sciences of the University of Buenos Aires, where he received his accountant's diploma in 1940 and later ob-

tained a degree as Doctor of Economic Sciences. During his railway career, he has simultaneously held a number of public appointments, including that of Accountant for the Municipality of Almirante Brown.

Mr. Jacinto F. Terenzi, who has recently been appointed Chief of the Traffic Department of the General Urquiza Railway, Argentina, was born in 1898, and joined the Entre Ríos Railways in 1910. He gained his experience in both station and commercial work and during his 39 years service with the railway has occupied a variety of positions. His father and grandfather were both connected with the Entre Ríos Railways (which, together with the Argentine North Eastern, Buenos Ayres Central and State Railways' standard-gauge lines form the General Urquiza Railway). Mr. Terenzi's grandfather took part in the construction of lines in the

province of Entre Ríos and Corrientes, and his father retired 19 years ago from the position of Commercial Inspector.

Sardar Karnail Singh, under whose tenure as Engineer-in-Chief, the Assam Rail Link project, described elsewhere in this issue, was completed ahead of the target date, was born in 1904. After graduating from the Thomason Engineering College, Roorkee, he joined the Indian Railway Service of Engineers in 1927 and was posted to the North Western Railway. From then until Partition he served with the N.W.R., being engaged mostly on surveys and construction and special works. Towards the end of the 1939-45 war, Sardar Karnail Singh was placed on special duty as Deputy General Manager, Rehabilitation & Development, being later in charge of surveys in the North Western Frontier Province and the Punjab. On Partition, he became Transfer Officer at



Mr. A. R. Ewer

Appointed District Motive Power
Superintendent, Doncaster,
Eastern Region



Mr. B. G. Turner

National Chairman of the Road Haulage
Association, 1948-50



Mr. F. T. Gray

Appointed Assistant to Commercial
Superintendent (Freight), North
Eastern Region, York

Lahore, to assist evacuation of railway and other employees from Western Pakistan. In November, 1947, he was appointed Engineer-in-Chief of the Assam Rail Link project.

Mr. A. R. Ewer, M.I.Loco.E., District Motive Power Superintendent, Trafford Park, London Midland Region, who has been appointed District Motive Power Superintendent, Doncaster, Eastern Region, entered the service of the former L.N.W.R. as a locomotive apprentice at Willesden and Bow locomotive repair shops, in 1910, and ten years later was appointed Locomotive Assistant, Holyhead. In 1923 Mr. Ewer went to Widnes as Running Foreman with the L.M.S.R. and later successively occupied the positions of Assistant District Locomotive Superintendent at Swansea, Kentish Town and Camden. He was appointed Assistant to the Divisional Operating Superintendent, Derby, in 1938, and was promoted District Locomotive Superintendent, Willesden, in the same year. He took up a similar post at Llandudno Junction in 1946 and was transferred to Trafford Park in December, 1948.

Mr. Bernard George Turner, M.Inst.T., who recently retired from the position of National Chairman of the Road Haulage Association, which he had held since 1948, is Managing Director of Thomas Allen Limited, and Park Royal Transport Limited, and Chairman and Managing Director of the Victoria Motor Haulage Co., Ltd., Edmund Tanton Limited, Henry Smither & Son Ltd., Henry Bournier Limited, and the Stanford Engineering Co. Ltd. He has been actively concerned in the work of the associations of the road haulage industry since 1933. From the inception of the Road Haulage Association, Mr. Turner has been a National Vice-Chairman of that Association, and a Member of Council of the National Road Transport Federation, and he has been a Vice-Chairman of the Federation. Before the formation of the National Road Transport Federation and the Road Haulage Association he was Chairman of the Planning Committee under the Perry Conference, and President of the London & Home Counties' Haulage Contractors' Association. Mr. Turner was a Member of the Road & Rail Central Conference, and of the committee of management of the British Road Federation, and he has been a Member of Council of the Institute of Transport. He is a Past Master of the Worshipful Company of Carmen. Mr. Turner recently received the first honorary membership of the R.H.A. to be conferred, in recognition of his eminent position in the road haulage industry for many years and in recognition of his outstanding services to the Road Haulage Association.

Mr. F. T. Gray, Assistant to Commercial Superintendent (Cartage & Terminals), North Eastern Region, who, as recorded in our June 23 issue, has been appointed Assistant to Commercial Superintendent (Freight), North Eastern Region, York, entered the service of the North Eastern Railway in 1922, in the office of the General Manager, York. He became a traffic apprentice in 1925 and underwent training until 1930. After nearly five years on the road motor section of the office of the Chief General Manager, L.N.E.R., he was appointed Assistant to the District Goods Manager, Leeds, and, later, Head of the General Section of the Passenger Manager's Department at York, a position he held until 1939. During the next two

years Mr. Gray successively became Acting Assistant to District Goods Manager, Leeds, Head of Coaching Stock Section, Central Rolling Stock Control, York, and Acting Assistant to District Goods Manager, Hull. In 1943 he became Acting Cartage Manager, York, and a year later was appointed to the post officially. In April, 1949, Mr. Gray became Assistant to Commercial Superintendent (Cartage & Terminals), North Eastern Region.

Mr. Lewis Hart, whose election to the Council of the Incorporated Society of Advertisement Consultants was announced

in our June 16 issue, was due to a printer's error stated to be Manager of the Brush Electrical Engineering Co. Ltd. Mr. Hart is Publicity Manager of the company.

OLD PERNAMBUCANOS DINNER

The third re-union dinner of Old Pernambucanos took place at the Charing Cross Hotel on June 27. Mr. Frank Ellis presided, and also present were: Messrs. J. C. Baker, H. W. Blake, R. H. Bradford, Conrad Davies, H. V. Harby, George Ingram, H. Duniam Jones, F. Martin, S. W. McKaig, Bertram Pease and Geoffrey S. Tomkinson.

Permanent Way Institution

Summer meeting in Sheffield

The annual summer meeting of the Permanent Way Institution was held in Sheffield from July 1 to 6, under the presidency of Mr. J. C. L. Train, Member of the Railway Executive, and before the meeting opened the members were welcomed by the Lord Mayor of Sheffield, Alderman Keeble Hawson. The summer convention was previously held in Sheffield in 1925 and 1909.

Mr. H. Janes, Hon. Secretary, read the report on the activities of the Institution during the past six months, which showed that the Irish Section had held a joint meeting with the Manchester & Liverpool Section.

The Bombay & Western India Section and the South India Section continued with their meetings as before, but the suggested sections in Pakistan had not yet found it possible to make a start with meetings, though preliminary arrangements were well in hand. Because of the unsettled state of the country the Malaya Section, which was reformed in October, 1949, had not recommenced meetings, but the local committee had met to decide procedure. Some 60 pre-war members had signified their wish to remain in the Institution and recruitment of additional members was now taking place.

The number of additional members enrolled during the past six months totalled 297, which was slightly less than for the same period in 1949, the number being made up of 8 fellows, 50 associate fellows, 23 members, 210 associate members, and 6 students. The Irish Section provided the largest influx of members, namely, 60, and during the half-year there were 83 transfers to higher grade of membership.

Mr. F. Lawson, Hon. Treasurer, in presenting the statement of accounts for the year 1949, said that a surplus of £162 was made on the year, but, had the recent increase of subscription not been made, there would have been a deficit of approximately the same amount. Thanks were accorded to Mr. Hector Hall and Mr. L. T. Starks for auditing the accounts. Donations and collections for the benevolent fund amounted to £59.

After the routine business had been dealt with, Mr. David P. Carr, Chairman of the Sheffield Section, spoke on "The City of Sheffield," giving some interesting facts of the early history of the city and its progress. Thanks were accorded to Mr. Carr by Mr. F. E. Harrison, past-President.

The annual summer dinner was held at the Royal Victoria Station Hotel. Mr. J. C. L. Train was in the chair, and among the guests were the Lord Mayor and the Lady Mayoress of Sheffield, the Master

Cutler, Mr. W. R. S. Stephenson, and Mrs. Stephenson.

Mr. J. Taylor Thompson, immediate past-President, proposing the toast of "The City of Sheffield," said that if they looked at a map of the Sheffield area they would see how closely Sheffield and the railways were linked together. Sheffield, moreover, was noted for its special steels, and many of the railway junctions where traffic was exceptionally heavy were made with manganese steel.

The Lord Mayor thanked Mr. Thompson for the way he had proposed the toast.

The toast of "The Permanent Way Institution" was given by the Master Cutler, who said he had noted that the Institution now had a membership of over 5,000.

The President, replying, agreed it was unique that all ranks could come to this function and that all ranks had the right to discuss matters at their meetings. One of the most important main-line electrifications in the country would run from Sheffield to Manchester.

The toast of "The Guests" was proposed by Mr. Donald D. Shaw and Lt.-Colonel M. W. Batchelor replied.

Among those present at the dinner were: Mr. G. D. S. Alley, The Hon. R. A. Balfour, Messrs. D. R. Bennett, T. H. Brooks, D. P. Carr, T. A. Carson, J. Cunningham, A. Curry, J. D. Dempster, H. B. Everard, J. H. Glendinning, H. J. Green, E. J. L. Hancock, T. S. Hancock, F. E. Harrison, John Heys, W. H. Higginbotham, H. Hodgson, W. D. Johns, F. A. Knutt, K. C. Marrian, E. J. M. Matheson, B. Mulliner, H. Ormiston, A. Lloyd Owen, W. Paterson, W. B. Pickering, A. M. Plumer, H. L. P. Smith, S. A. Strange, N. W. Swinnerton, H. E. Thompson, K. B. Turner, J. A. Turner, J. Walton, Ashley Ward.

An interesting programme of works visits and social events was drawn up for the week. On Sunday, July 2, some 50 members inspected the track between Dore and Totley Station and Beauchief, while in the afternoon there was a motor coach tour to Matlock and Buxton. Next day, members paid a visit in the morning to the works of Edgar Allen & Co. Ltd., Tinsley, and in the evening they were the guests of the directors of Thos. W. Ward Limited.

Among the visits arranged for Tuesday was one to the works of the Staveley Iron & Chemical Co. Ltd., and to the tramway workshops at Sheffield. In the afternoon there was a visit to the Civil Engineer's Workshops of the Eastern Region in Woodburn Road. These shops were constructed on a new site to replace premises which suffered war damage. On Wednesday, the visitors inspected the Woodhead Tunnel site, the works of Arthur Balfour & Co. Ltd., and the East Hecla Works of Hadfields Limited.

London Area Passenger Charges Scheme

Conclusion of Transport Tribunal inquiry into the B.T.C. application

The inquiry by the Transport Tribunal into the London Area (Interim) Passenger Charges Scheme ended on June 28. The hearing occupied 25 days and objections to the scheme were raised by 109 organisations representing 10 million persons in the area.

Mr. Lionel Heald, K.C., in his final summing up on behalf of the B.T.C., pointed out that the British Transport Commission was not an organisation of the same kind as the former undertakings responsible for the railways. In the latter case it was a duty to study the interests of the shareholders who might voluntarily forego an increase in revenue for policy reasons or because they thought for some reason or other they should run at a loss. Instead of the shareholders they had a very different kind of authority behind the scenes in the shape of the Treasury.

A valuable lesson could be learned by comparing the present revenue position of the British Transport Commission with that of the amalgamated companies under the Railway Act of 1901. It had almost been suggested that the Transport Tribunal was bound to accept any scheme the B.T.C. put forward, even if the services given were inadequate. It was the duty of the B.T.C., however, under the Transport Act, 1947, to produce a scheme and put it before the Tribunal and then it was entirely a matter for the Tribunal.

There had been much said about the B.T.C. making life more difficult for the Londoner and not giving the Londoner a fair deal. It had been largely admitted that the basic object of the B.T.C., which was to produce a sound scheme on sound principles, was, indeed, attained by the scheme put forward. The question now arose as to whether it was necessary, and the Commission said that it was so, to arrange the scheme so that it produced more net revenue. If the B.T.C. thought that it was so, and was convinced that it was its duty to provide an increased revenue, to suggest that it was doing "something wicked" was absurd.

The Transport Act, 1947, under which the scheme was formulated gave the B.T.C. no justification for "shooting short of its revenue target" on the grounds that the attainment of that target would cause hardship. That was not contemplated under the Act. Hardship could only come in to a limited extent. They could, and should, make allowance for it, only in so far as they could arrange a scheme so as to reach the target with the minimum hardship.

Mr. Heald, continuing, said, with reference to criticisms about the provision of reserve funds, that it would be quite wrong for the B.T.C. not to make provision for liquidating its deficit. With regard to the general reserve they could not possibly say that was not a proper item to include in the target. He thought they could safely leave it to the Transport Tribunal to accept the view that the British Transport Commission must be trusted to use a proper discretion in granting cheap fares and concessions and generally going out for traffic. He thought it would be most unfortunate to standardise such things.

When people talked about "soaking" some of the big shareholders, said Mr. Heald, it was well to remember that one of the biggest of them was the Government, which he believed held about £28 million worth of stock.

Sir W. Bruce Thomas, President, closing the inquiry, said that the Tribunal had received great assistance from the British Transport Commission and from the majority of the objectors. They would take into consideration everything they had heard and would announce their conclusions in due course.

Rail Brakes at Whitemoor Down Yard

Frolich equipment installed

The replacement of the Eddy Current brakes at the Whitemoor Down Marshalling Yard, Eastern Region, British Railways, by rail brakes of the Frölich type has been completed. The Eddy Current brakes were installed in December, 1932, and were the first retarders in the Down Yard. The first of the two new rail brakes came into use towards the end of November, 1949, and the second has now been connected to the power plant and is undergoing preliminary tests.

The new installation consists of two hydraulic rail brakes with the associated power plant and control equipment. The equipment has been installed on the same sites as the Eddy Current brakes and new foundations have been provided to allow access under the brakes for inspection and maintenance. The brakes are 75 ft. long over the braking rails and have six lifting cylinders.

To accommodate the power plant an extension has been built to the ground floor of the existing control tower in the direction of the hump. This building houses two hydraulic pumps, a hydraulic accumulator, air compressor, suction tank, and electrical control panels. There is an operating control panel in the top floor of the control tower, and the rail brake control valves at ground level are worked by one operator through hand levers and down rods.



Retarder at Whitemoor, viewed from control tower, looking towards hump

The pressure pumps, one of which acts as a standby, are three-throw horizontal pumps of approximately 23 gal. a min. capacity, driven by 35-h.p. slip-ring motors running at 725 r.p.m. An accumulator of the air-loaded hydraulic type is provided, together with a three-stage two-crank air compressor, which charges the air bottles to a pressure of 1,600 lb. per sq. in.

The firm of Metropolitan Vickers-G.R.S. Limited was responsible for the supply and installation of the equipment, to the requirements of the Mechanical & Electrical Engineer, Eastern and North Eastern Regions, British Railways.

Combined Courses for Cartage and Terminal Supervisors

In 1947 the former L.N.E.R. experimented with a residential course of instruction for cartage supervisors. This experiment was so successful that British Railways decided to provide a similar course on an inter-Regional basis during 1948, and this was followed by a comprehensive series of Regional courses in 1949.

This year, however, the Railway Executive has carried the development a stage further by providing a series of inter-Regional courses for cartage and terminal supervisors attending together. These courses, which are being provided at Faverdale Hall, Darlington, open an important development in the training and education of supervisory staff. For the first time cartage and terminal supervisors from all Regions of British Railways are being brought together to learn from each other as well as from the instructors.

Each course lasts four days and includes two evening sessions. They are in no sense a series of lectures, for each subject is introduced by a discussion leader, after which the supervisors are invited to comment freely on the subject and to contribute the fruits of their own experience as related to the practice of their particular Region.

The courses are being held under the general supervision of Mr. J. A. R.

Hersley, Assistant District Goods Superintendent, Paddington, Western Region, who took charge of the Western Region course for cartage supervisors in 1949. Each course is opened by a senior officer of the Railway Executive.

Parliamentary Notes

Haulage Undertakings Employees' Compensation

Mr. Alfred Barnes (Minister of Transport) in the House of Commons on June 28 moved "That the Draft Transferred Undertakings (Compensation to Employees) Regulations, 1950, be approved." He said that this was the first time in the history of the road haulage industry that any effort had been made to establish a code for compensation. In the case of the railways, electricity, and London Transport, codes had been established and were generally recognised. There was a good deal of knowledge concerning those industries, but that was not the case with road haulage.

Among the points emphasised by Mr. Barnes was the fact that the draft Regulations were very different from those of some of the other nationalised industries. They dealt, he said, with the problem whether any individual whose services were dispensed with would suffer an undue handicap in getting similar other employment. The B.T.C. fleet of vehicles did not establish a monopoly in road transport. If any individual should lose his employment through nationalisation, there was a very wide field for obtaining other employment.

After discussion, the motion to approve the Regulations was agreed to without a division.

Questions in Parliament

Scottish Train Fire

Commander A. H. P. Noble (Chelsea—C.) on June 26 asked the Minister of Transport what action was taken as a result of the report on the fire which occurred in an express passenger train on June 23, 1949, at Pennanshiel Tunnel in the Scottish Region, British Railways.

Mr. Alfred Barnes (Minister of Transport): The batch of about 30 coaches, which had been sprayed with this particular cellulose lacquer was withdrawn from service immediately after the accident. Other coaches in which cellulose lacquers of any kind may have been used are being tested for fire risk as they pass through shops for repair, and preventive precautions taken. The attention of the associations concerned with passenger road transport vehicles has been drawn to the report.

Transport of Perishable Crops

Sir George Harvie-Watt (Richmond—C.) on June 22 asked the Minister of Agriculture whether he had taken steps to help fruit growers have their perishable crops transported to markets in the North in time for morning sales and so avoid deterioration and waste.

Mr. T. Williams (Minister of Agriculture): The transport of perishable crops is a matter for arrangement between the fruit growers and the transport agencies concerned, but I should be willing to look into any special difficulties.

Sir George Harvie-Watt: Is there any

prospect of getting back to the pre-war system of running special trains from the growing districts to cities like Manchester, Newcastle, and Glasgow?

Mr. Williams: That is a question for the Minister of Transport.

Report on London Railways

Mr. Nigel Davies (Epping—C.) on June 26 asked the Minister of Transport whether he intended making a statement on the 1949 Working Party's Report for London Railways; whether he was prepared to accept the recommendations of the report in general; and whether he was prepared to accept the proposal for the electrification of the Chingford and Enfield Town lines.

Mr. Alfred Barnes stated in a written answer: The recommendations mainly relate to long-term improvements which could only be carried out gradually within the framework of capital investment policy. They must all be carefully considered with the planning authorities concerned and properly related to other aspects of planning. In regard to the Chingford and Enfield Town lines I am in consultation with the British Transport Commission and hope to discuss it with the representatives of the areas concerned.

Sanitary Conditions in Railway Stations and Trains

Sir Herbert Williams (Croydon East—C.) on June 29 asked the Minister of Health if he would direct local authorities to use their powers under the Public Health Act to inspect sanitary conditions in railway stations and trains.

Mr. Aneurin Bevan (Minister of Health), in a written answer, stated: I have no authority to give such directions.

Excess Baggage Charges by Troop Trains

Sir Jocelyn Lucas (Portsmouth South—C.) on June 27 asked the Secretary of State for War if he was aware that British officers travelling by special troop trains from London to Liverpool, en route for Malaya, were charged excess luggage on the baggage which they had to take; and if he would arrange with British Railways to cease this practice, or to charge any excess to his department's account.

Mr. John Strachey (Secretary of State for War): We do pay for an officer's baggage up to at least 5 cwt. for himself. He has only to get a warrant or consignment note for excess baggage up to this amount.

Steel Prices

Mr. G. Nabarro (Kidderminster—C.) on June 26 asked the Minister of Supply why price-control regulations remained necessary for steel, rolled and re-rolled steel products and wire, excepting only steel sheet and tinplate.

Mr. George Strauss (Minister of Supply): Iron and steel prices are controlled in conformity with the policy of maintaining over as wide a field as possible low and stable prices of essential commodities.

Mr. Nabarro: Is the Minister aware that as a result of continued price control many manufacturers who are steel consumers are deprived of selective buying advantages? Would he consider price-controlling those items of steel of which an abundant supply is available?

Mr. Strauss: The prices laid down by the Government are maximum prices.

Allocation of Machine Tools

Mr. Harold Watkinson (Woking—C.) on June 27 asked the Minister of Supply if he would consider allowing a greater pro-

portion of machine tool production to be allocated to the home market.

Mr. John Freeman (Parliamentary Secretary to the Ministry of Supply) stated in a written answer: No. The Government considers that present arrangements afford the best balance between the needs of home industry and the need that the machine tool industry should make the maximum contribution to exports, particularly to hard currency areas.

Prices of German Machine Tools

Mr. Stanley Prescott (Darwen—C.) on June 27 asked the President of the Board of Trade whether he was aware that German machine tool prices bore no relation to marketing costs and even varied from one customer to another; that in some instances German firms consistently quoted prices 20-30 per cent. below British prices; and whether he would make a statement on the policy of H.M. Government.

Mr. A. G. Bottomley (Secretary to the Overseas Trade Department), in a written answer, stated: No. But if Mr. Prescott cares to let me have any information, I should be glad to examine it. The Allied High Commission has powers under the Occupation Statute to intervene in respect of any proved instance of unfair trade practices in Germany. Subject, however, to the avoidance of such practices, we have to recognise that Germany must, if she is to pay her way again and to play her full part in the economic recovery of Western Europe, rebuild her trade in the export markets of the world; and H.M. Government does not intend to use its position as an Occupying Power to prevent an expansion of German exports, provided this is achieved by fair means.

Staff & Labour Matters

Western Region Pension Scheme

Notices were posted last week at Western Region locomotive sheds by the Railway Executive explaining to the men that, as a result of the introduction of standard promotion arrangements following the adjustments which had been made in regional boundaries, it could no longer be a requirement for membership of the G.W.R. Enginemens & Firemen's Mutual Assurance Sick & Superannuation Society to be compulsory for new entrants. As from July 1 new entrants to the locomotive staff at depots in the Western Region formerly part of the Great Western Railway will be eligible for membership of the society on a voluntary basis.

The position of no man, whether a compulsory or a voluntary member, will be worsened. It has been made clear to the staff concerned that the position of present or future members of the society, insofar as supplemental pensions are concerned, will not be adversely affected by the fact that membership of the society for new entrants will be on a voluntary basis instead of a compulsory one.

This explanation of the position did not in all cases avert the threat of unconstitutional action which was made during the week. At midnight on June 30 engine drivers and firemen at Banbury depot carried into effect a decision to strike from Friday midnight until Sunday midnight each weekend until the Railway Executive agreed to revert to the previous arrangements which have hitherto operated for pensions. Passenger services were not affected by the action of the men, but goods traffic was held up in the marshalling yards. Didcot footplate staff, and

certain staff at Birmingham. Tyseley Depot, refused to work trains which were normally operated by men from Banbury Depot.

At a meeting on July 2, Banbury foot-plate staff, Western Region, passed a resolution reaffirming strike action every weekend until the Railway Executive reintroduces compulsory membership of the Mutual Assurance Society. At a meeting the next day, however, the men decided not to return to work as originally intended on Sunday midnight, and a large proportion of the men rostered for duty on July 3 did not report for duty. This action was taken in protest at the Railway Executive decision to ask those men who had not reported for rostered duty during the weekend to give an explanation of their absence. This procedure was in accordance with the normal disciplinary arrangements.

T.U.C. Wages Policy

In a statement sent out to affiliated trade unions last week the General Council of the T.U.C. signified its approval of the abandonment of the strict policy of wage restraint and has recognised that there must be greater flexibility of wage movements in the future than was envisaged in the policy approved by the conference of executives in January last.

The statement says that the General Council is firmly convinced that there is no formula which can be devised as to how this flexibility can operate. Also: "Its operation must be left to the good sense and reasonableness which has been displayed by unions, particularly in the post-war period, with full account being taken of the continued warning of the General Council that our basic difficulties remain, even if temporarily lessened in their intensity."

The statement continues: "Affiliated organisations will appreciate the interdependence of various sections of the trade union movement in the struggle to secure economic stability and also the difficulties created by the lack of any practicable formula as to how the necessary flexibility should operate. The General Council offers facilities for such consultation as affiliated unions may desire to assist them in the consideration of their problems."

As a result of the easement in wage restraint, Mr. J. B. Figgins, General Secretary, N.U.R., at Morecambe last Sunday stated that unions were now entitled to submit wage claims not only for the lower paid, but for all workers. He stated: "We are now in a much better position for negotiations than we have ever been."

Mr. Figgins also advocated, as on previous occasions, the annulment of the Condition of Employment & National Arbitration Order No. 1305, which requires 21 days notice to be given of a dispute to the Minister of Labour & National Service before strike action can be taken.

The National Coal Board has announced its rejection of the miners' claim for increased rates of pay for lower-paid mineworkers. The claim was for an increase of 2s. 6d. a shift or 15s. a week, but this was later reduced to a claim for 2s. a shift. It is understood that the Executive of the National Union of Mineworkers is likely to press instead for a revision of the agreement under the terms of which miners' wages were formerly adjusted in relation to the cost of living.

A Direct Hamburg-Copenhagen Line

Proposed new route shortening the present roundabout journey by more than 100 miles

Existing rail connections between Western Germany and Copenhagen (and Sweden and Norway) are: (a) the Jutland route, via Flensburg, Fredericia, the Little Belt bridge, and the Great Belt train ferry; and (b) the Mecklenburg route, via the Russian Zone and the Warnemünde-Gjedser train ferry. By the former the distance from Hamburg to Copenhagen is some 340 miles; the fastest passenger trains taking about 11 hr.; by the Gjedser route the distance is only 260 miles, but there are at present no through passenger services with Western Germany.

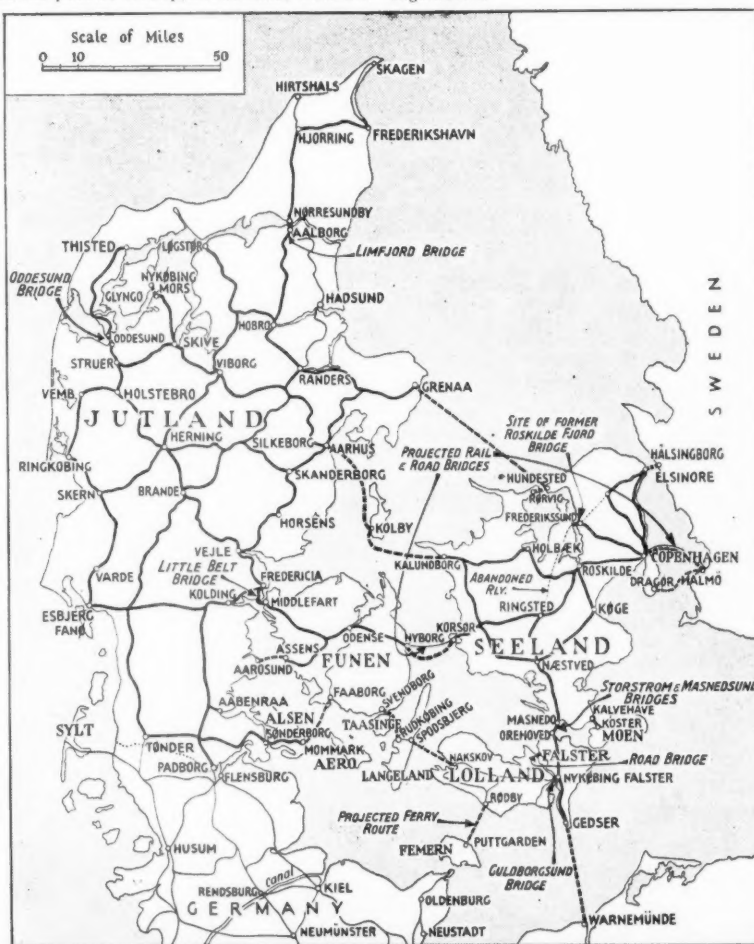
A third route, which has been under consideration for many years, would traverse the German island of Fehmarn and the Danish island of Lolland. The latter is already connected by bridge with the adjacent island of Falster which, in turn, is connected with Zealand (the island on which Copenhagen is situated) by the Storstrom bridge. On the German side, Fehmarn is connected with the mainland by a steamer service across Fehmarn Sound, and a bridge is envisaged. There remains the building of a ferry harbour on the north side of Fehmarn and the enlargement of the port of Rodby, in Lolland, with the

necessary rail and road connections on either side.

The Fehmarn route would be only some 220 miles long, including the ferry journey (12 miles), so that the rail journey between Hamburg and Copenhagen could be cut to 6½ hr. A motor road across Lolland is already under construction, and connection with the German *autobahn* near Lübeck is not considered difficult. The new route would be of international importance, being on the direct line of route Paris - Cologne - Hamburg - Copenhagen - Stockholm. A Danish committee has been active in the promotion of the project. It is also proposed to include the Fehmarn route in the European communications system planned by the United Nations Organisation.

In 1946 the construction was proposed of ferry berths at Travemünde, near Lübeck (south of Neustadt in the accompanying map). This was to be the Western German terminus of a wagon ferry from Gjedser; no passenger service, however, was envisaged.

We are indebted for much of this information to our Danish contemporary *Ingeniøren*.



Rail and ferry routes in Denmark, showing proposed connection with Western Germany via Fehmarn (Femern)

Ministry of Transport Accident Report

*Lime Street, Liverpool, London
Midland Region: November 19, 1949*

Brigadier C. A. Langley, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at 2.26 a.m. on Saturday, November 19, 1949, at Lime Street Station, Liverpool, when the 2.0 a.m. empty stock train from Edge Hill sidings, consisting of 14 coaches and a gas tank, hauled by an 0-6-2 tank engine, got out of control on the steep descending gradient and collided at about 40 m.p.h. with the hydraulic buffers in No. 6 platform. The vacuum brake train pipe was not connected between the first and second coaches.

The buffers and a timber booking office directly behind were destroyed. The leading coach was torn from its bogies, swept away the bunker, cab and left-hand tank of engine and was hurled 60 ft. across into the hotel wall. The second coach followed it and landed on its side on the concourse and the third was thrown on No. 6 platform. A bookstall and sweet kiosk also were destroyed. The enginemmen and guard jumped off as the train was entering the station. The driver sustained a fractured ankle and broken finger. The others received only minor injuries. Two clerks in the booking office had fortunate escapes and were only shaken.

The "popping" of the engine whistle was heard by the inspector who took prompt steps to summon assistance. City fire brigade, station staff and police, with ambulances, handled the position in an exemplary way. It was a dark night with slight mist and greasy rail.

The approach to Lime Street is down a gradient of 1 in 93. Edge Hill is 1½ miles away and the Downhill sidings are at the London end of the station there, and consist of two groups. The train engine was of obsolescent type, travelling chimney first, and weighed 44 tons. Maximum boiler pressure was 160 lb. Vacuum was maintained by the large ejector and cross-head pump. The total weight of the train was 473 tons and brake power percentage of the full weight of the train under various conditions would have been:

	Per cent.
Brake working on engine only	2
" " " " and first coach only	7
" " " " and all vehicles	85

Empty carriage stock is stabled and trains are made up in the Downhill sidings, where the staff works in three shifts, there being one inspector and three shunters on duty from 7 a.m. to 3 p.m. and from then till 11 p.m., after which there are one inspector and two shunters. During the first two shifts, two shunters work at the "top," or London end, and one at the other; during the third both work at the top end, but are assisted by the carriage shop shunter who usually reports for orders at the bottom end about midday.

Details of the stock in each siding are recorded in a log book and it has been the custom to accept the entries referring to a particular train as evidence that the stock of the train in question was correctly made up.

It was also the practice for the shunters at the "bottom end" of the yard to be responsible for checking trains before departure. This applied to the day shifts only and during the third shift, when there was no "bottom end" shunter, one of the others was supposed to do this work. There were no written instructions, however, and

occasionally complaints were received from guards that the trains were not correctly coupled up.

Local instructions regarding use of the vacuum brake between Edge Hill and Lime Street are printed in the Sectional Appendix to the Working Time Table and are as follows:—

"The vacuum brake on all empty stock trains between Edge Hill and Lime Street must be coupled up throughout the train and connected to the engine before leaving Edge Hill, and the regulations respecting the working of the vacuum brake must be complied with. Trains consisting of mixed passenger and goods stock must have the brake pipes coupled up."

Report and Evidence

The initial marshalling of the train began during the night of November 17, when the carriage shop shunter was instructed by the temporary inspector to remove a corridor third brake from the Lime Street end of a train set and replace it by corridor brake van, which was done early next day. The van was coupled to the leading coach but the shunter did not connect the vacuum pipe. He thought the van was required only in order to hold the other vehicle stationary.

This omission remained unnoticed in subsequent marshalling and when the train was ready to leave at 2 a.m. on the day of the accident the guard failed to test the brake and thus started with only 7 per cent. brake power.

The driver said he was very familiar with the arrangements for working there, and after taking an empty stock train into Lime Street returned to take the 2 a.m. He had some initial difficulty in creating sufficient vacuum, from low boiler pressure, but later obtained 21 in. He was asked to draw ahead but could not move and sent the fireman to take off the brakes, but he still could not start until apparently a shunter took off a hand brake in rear. He then had a little difficulty in stopping and remarked that his brake was poor; brakes always were on that class of engine. His guard said he might start when he "had got his vacuum." The Lime Street home signal indicated a clear run to the buffers, and he did not apply the brake until nearing it, when travelling at about 30 m.p.h. The brake having little retarding effect he began popping his whistle. He reversed and put sand down, but passed the signal at about 50 m.p.h. He jumped off at the platform. The fireman, an experienced man, generally confirmed this evidence.

The guard said he got into each van in turn to examine the hand brake, and in one had to take it off, but he did not test the vacuum in any van. He thought the gauge showed 20 in. The train usually was ready and he "took it for granted he was all right." He told the driver he was "right away now." He noticed nothing unusual until the whistling began; then he realised they were gaining speed and screwed down the hand brake, the vacuum proving useless.

Immediately after the accident all except two of the destroyed coaches were examined and the brakes found to be off, brake blocks cold and cylinder pistons down, except on the last coach where the hand brake had apparently been put on after the train stopped. Van gauges were at zero. The vacuum pipe at the trailing

end of the leading coach was found on the stopper with the pin in. It was clear that the vacuum brake had been operating on the leading coach only.

Investigations into the marshalling arrangements showed that the hose pipes between what came to be the first and second vehicles of the train had not been connected in the first place because a shunter had been told by an inspector that the van was required for brake power only. The inspector and acting inspector added more stock in the course of their turns of duty and both said they would have expected the van to be properly coupled with hose pipes connected, but neither of them had the train examined and it was not due for dispatch during their shifts.

The inspector first concerned noted on the day before the accident that there were eleven coaches and a gas tank ready for the train and early on the day itself he was asked by the Lime Street Inspector to add a three-set at "the top end." The train had to be drawn ahead but no special instructions were given regarding examination of the train by the shunters at that end.

He did not appear to be clear regarding responsibility for checking the train. He would have expected one or other of the shunters to have done so and took the entries in the log book to mean that the 12 vehicles were properly coupled with vacuum pipes connected. The shunter who was instructed to draw the train ahead saw that all brakes were off as he walked back from the engine, except the hand brake in a van. He released this, and, after the movement, screwed it on again. He did not examine to see if the hose pipes were connected, nor look at the van gauges, taking the log entries to mean all was in order. He considered that another shunter should have examined the train, but this other man said he had nothing to do with the train that night.

Inspecting Officer's Conclusion

There is no doubt that the train left the sidings with the vacuum brake operating on the leading coach only and the primary responsibility rests on the guard whose neglect in failing to test before starting was inexcusable.

In spite of his own original adverse comment on the brake after the first shunt movement the driver does not appear to have been at all apprehensive and made no attempt to test it until travelling at maximum permissible speed on the falling gradient. Initial difficulty in creating vacuum with low boiler pressure probably misled him into thinking the hose pipes were connected through and the guard's assurance that they were ready to start lulled him into a false sense of security.

The regulations rightly lay down that the brakes must be tested in good time when approaching steep falling gradients and this should have been done on leaving the sidings. The driver should then have noticed the lack of power, and with the aid of the guard's hand brake been able to stop the train before it got out of control. He is 56 years old, with 30 years' service and a good record.

The initial omission to connect the hose pipes, of no consequence with loose stock, remained unnoticed for 24 hours, during which time the train was progressively marshalled by two other inspectors. When the

first inspector returned, he should have instructed his staff to check it. He did not appear to be very clear regarding his responsibilities.

Remarks

Failure to couple up and check the train before departure seems to have been the outcome of regrettably slack methods of working in which custom rather than rule prevailed and clear instructions defining the responsibilities of all concerned appear to be required. The accident would not have occurred but for the co-incidence of a much more serious failure of two experienced members of the train crew to comply with the brake regulations. Neglect by a guard to test after the engine is attached is very unusual and the need for strict compliance with regulations on all occasions needs no emphasis. The running test of the brake is also of special importance for empty stock movements into Lime Street and it seems desirable that drivers should be reminded that after leaving Downhill sidings there is only a short distance available in which to make this test before reaching the steep gradient.

Notes and News

Colonial Road Development.—Road development projects to be financed from an E.C.A. fund, totalling approximately \$975,000, are to be undertaken in the Gold Coast, Northern Rhodesia, Nigeria, Sierra Leone, Nyasaland, North Borneo, and Sarawak.

Crown Agents for the Colonies.—Staff required for a catering company in West Africa for service in Nigeria for a tour of 21 to 24 months with the prospect of re-engagement. Candidates, between 25 and 35 years of age, should have a knowledge of French and German. See Official Notices on page 27.

British Transport Officers' Guild.—At the recent annual general meeting of the British Transport Officers' Guild it was reported that 165 new members had been enrolled during the year. The membership is now 1,706. Members were informed that correspondence had taken place between the Guild and the various Executives, namely, Docks & Inland Waterways, Hotels, Road Haulage, and London Transport, for official recognition of the Guild, as in the case of the Railway Executive, as an appropriate body with which to consent for the purpose of negotiation. The matter was being followed up.

South London Tramway Conversion.—On July 5, Lord Latham, Chairman of the London Transport Executive, gave details of the forthcoming conversion to bus operation of the South London tramway routes, which is due to begin on October 1 next with the replacement of five routes in the south-west and will occupy until October, 1952, when the last two routes based on Charlton tram depot will be changed over. Fourteen out of 39 converted routes will be extended beyond the present termini.

Institution of Civil Engineers' Conversation.—At the annual conversazione of the Institution of Civil Engineers, on June 29, there was an exhibition of engineering models and scientific instruments. Exhibits included models of an extension to a factory, and a diorama and scale model of the Owen Falls hydro-electric scheme in Uganda. Instruments exhibited included an automatic camera and stereo-plotting

instrument for producing large-scale aerial surveys at scales up to 40 ft. to 1 in. Ultrasonic weld inspection and quartz crystals used in radio circuits and factory timekeeping were also exhibited. Other exhibits included a concertina bridge and photographs of cargo jetties in which gravity fenders are used.

Ribble Motor Services Limited.—Presiding at the recent annual general meeting of Ribble Motor Services Limited, the Chairman, Mr. R. P. Beddow, said that their seasonal operations would suffer from the derationing of petrol. The decision of the Chancellor of the Exchequer to double the petrol and fuel oil taxes for road vehicles seemed to be a deliberate attack on the bus industry. Of fares paid by passengers almost 3d. per journey went in tax. With regard to the North East Area Scheme, remarked Mr. Beddow, there had been no good case made out anywhere for the nationalisation of the industry.

Extra Trains for R.A.F. Display.—For the Royal Air Force display today (Friday) and tomorrow the Southern Region of British Railways is running more than 300 additional trains between London, Farnborough, and Aldershot. Cheap tickets to Farnborough at 8s. return will be available by all trains from Waterloo and from principal South of England stations at approximately the single fare for the double journey. From suburban stations special cheap day tickets will be available by all trains to Aldershot and North Camp from both of which stations a special service of buses will run direct to the airfield.

New Night Service to Continent.—As from July 3, the Southern Region of British Railways has been operating a new night service to the Continent via Southampton-Cherbourg. This service, which is primarily intended for the conveyance of motorists and their cars, is being operated by the vessel *Duke of York*. Sailings are being made from Southampton at 11.30 p.m. on Mondays and Wednesdays, returning from Cherbourg at 11.45 p.m. on Tuesdays and Thursdays, until September 28. The Channel crossing takes some 6½ hr.; passengers from London travel from Waterloo by the 9.5 p.m. boat train.

Retired Railway Officers' Society.—It has been the custom of the Retired Railway Officers' Society to organise functions each year to which ladies are invited. One of these is the ladies' tea, held at the Abercorn Rooms, Liverpool Street, on March 28, and another is the annual outing, which this year took place on June 20 to Ryde, Isle of Wight, when the party, which included the President, Alderman V. T. Venton, consisted of about 30 members and their ladies. By the courtesy of the Railway Executive accommodation was reserved on the 9.45 a.m. from Waterloo to Portsmouth Harbour and thence by ferry steamer to Ryde. After lunch most of the party went on a motor coach tour. The arrangements for the outing were carried out by the Hon. Secretary, Mr. F. E. Cox.

A. C. Wickman Limited.—In his statement circulated with the report and accounts of A. C. Wickman Limited, the Chairman, Lord Aberconway, said that export trade was hampered by the inability of foreign customers to obtain import permits, and currency restrictions curtailed business in handling specialised machine tools from the U.S.A. and Switzerland. To meet this difficulty they were negotiating with certain of their American principals for the manufacture under licence of their pro-

ducts in this country. Prospects were reasonably good. The order book was greater at the commencement of the current trading year than it was at the beginning of the year under review. The field for the application of tungsten carbide was always expanding and their machine tool designers were continuously devising new methods of production of components.

Greenwood & Batley Results.—A final dividend of 10 per cent., making 15 per cent. for the year ended March 31 (the same as for previous year) is recommended by the directors of Greenwood & Batley Limited. The net profit, after tax, is £63,962 (£44,261). Income tax paid amounted to £55,793 (£46,228) and profits tax £25,200 (£22,300). An amount of £20,000, against £10,000, is allocated to general reserve.

British South Africa Company.—The net profit of the British South Africa Company for the year ended September 30, 1949, at £1,458,778, exceeds the profit for the previous year by £64,000. A dividend was approved at the recent annual general meeting of 33½ per cent., that is, 5s. a share, less income tax, to absorb £1,204,569 (against 26½ per cent., or 4s. per share, absorbing £963,655 for the preceding year). This leaves a carry-forward increased by £254,209 to £1,841,028.

Transport Research Studentship.—Applications are invited for the Rees Jeffreys grant for research into the economics of Transport. The object of this grant is to enable a university graduate or any person who has been engaged in the administration of transport or in the production of transport equipment or facilities to devote at least one whole year to full-time research at the London School of Economics. Further particulars and an application form, which must be returned by August 31, 1950, may be obtained from the Registrar, London School of Economics, Houghton Street, London, W.C.2.

Named-Train Posters.—The Public Relations & Publicity Department of British Railways, London Midland Region, has recently produced four named-train posters, on behalf of the Eastern, North-Eastern, Scottish, and London Midland Regions. The set is one of the first of train posters to be carried out in scraper board, and shows the "Royal Scot," "Flying Scotsman," "Mid-Day Scot," and "Capitals Limited." The posters are for display at appropriate stations during the currency of the summer timetable and three of the designs can also be used with suitable amendment during the winter months.

Imperial Chemical Industries.—Presiding at the recent annual general meeting of Imperial Chemical Industries Limited, the Chairman, Lord McGowan, stated that the consolidated trading results were about £4,000,000 lower in 1949 than in 1948. The main factors were additional costs of production not reflected during 1949 in increased selling prices, and a fairly sharp reduction in the export prices of some products to meet the competition forecast last year. Gone were the days when they were unable to produce enough for all customers and had to resort to rationing to maintain a balance between the claims upon their output. Today they must keep a careful eye on prices if they were not to lose business to keen competitors. At £174,000,000 their turnover was £10,000,000 higher than in 1948. The total value of

Crown Agents for the Colonies

STAFF required for a catering company in West Africa for service in Nigeria for a tour of 21 to 24 months with the prospect of re-engagement. Salary from £50 to £750 a year. Contributory pension scheme. Outfit allowance £50. Free passages by air. Fully furnished quarters and food provided. Candidates between 25 and 35 years of age should have a knowledge of French and German and be qualified for either of the following posts:—(a) CATERING MANAGER. Applicants must have had experience in hotel kitchen routine and office administration. (b) CATERING MANAGER TRAINS. Applicants must have had considerable experience in restaurant car catering and services. The selected candidate will be based at Kaduna and required to travel on line approximately 5 days a week. Apply at once by letter, stating age, full names in block letters, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting for (a) M/N/25937/3E, and for (b) M/N/26204/3E, on both letter and envelope. The Crown Agents cannot undertake to acknowledge all applications and will communicate only with applicants selected for further consideration.

exports was also higher. In 1949 they did a larger volume of business at a smaller margin, this reduction in the margin of profits being due to both increased costs and reduced or maintained selling prices.

Wagon Repairs Limited.—The net profit after tax, of Wagon Repairs Limited for 1949-50 was £159,048, against £165,608 for the previous year. A final ordinary dividend is to be paid of 10 per cent., making a total of 20 per cent., the same as last year.

Transport Arbitration Tribunal.—A sitting of the Transport Arbitration Tribunal has been arranged for July 17 to hear an application by Liss Transport Limited, to which the Road Haulage Executive are respondents, for the determination of a question arising under Section 47 (2) of the Transport Act, 1947.

French Express in Level Crossing Accident.—When a motorcoach was struck by a Paris-Aix-les-Bains express train at the level crossing at Saint-Amour on Monday, 21 of the 26 persons in the coach were killed, and four other died later in hospital. The survivor was only slightly injured. After striking the motorcoach as it crossed the track the express dragged it for 600 yd. It is not yet known why the level crossing gates had been left open.

Conveyance of Livestock by Road.—The Road Haulage Association has agreed with the National Farmers' Union a set of conditions under which livestock will be carried and it is recommending its members to carry all livestock subject to these conditions. These ensure that, as from July 1, all livestock hauliers are adequately insured against loss or injury arising from negligence on the part of the carrier. The extent of the liability is limited to £100 for a horse or head of cattle, £40 for a pig, and £12 for a sheep, though farmers can be covered for higher values by declaring the tare value at the time of consigning and paying a slightly higher rate.

Dunlop Rubber Co. Ltd.—Presiding at the recent annual general meeting of the Dunlop Rubber Co. Ltd., the Chairman, Sir Clive Baillieu, said that Government expenditure still towered to ever higher levels. There had been no real relief from taxation and no adequate restoration of incentives. Unless statesmen called a halt, and started the nation on the task of cutting its coat to its cloth, then narrowing profit margins and reduced revenue yields

OFFICIAL NOTICES

FOR SALE.—Kendall & Gent 6-ft. Radial Drill, ready for immediate use. Price £200.—MODERN MACHINE TOOLS LIMITED, Maudslay Road, Coventry.

DIESEL LOCOMOTIVES.—Ruston Hornsby 24-in. gauge Diesel Locomotives, 4 wheel, chain driven, 3-speed gearbox (forward and reverse), hand-operated friction brakes on two wheels. One powered by 20-h.p. Lister engine. Three powered by 10-h.p. Lister engine.—COX & DANKS LIMITED, Scapa Works, Neath, Glamorgan. Phone: Neath 2205.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth. 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

DIRECTORY OF RAILWAY OFFICIALS & YEAR BOOK. A useful reference book for railway officers, engineering firms, and all who do business with railways. The only Directory which enables one to find the right railway and the right officer at the right moment. Issued July each year. Price 30s. net. Tothill Press Limited, 33, Tothill Street, London, S.W.1.

The Peruvian Corporation Limited

THE Directors of The Peruvian Corporation Limited announce that upon the resignation of Mr. J. D. Kennedy, they have appointed Mr. H. G. Clark Secretary as from July 1, 1950.

OLD-ESTABLISHED Rubber Company wish to appoint an Agent in London. Access to Railway Executive and Government Offices essential. Replies in confidence—Box 781, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

INTERNATIONAL RAILWAY ASSOCIATIONS. Notes on the work of the various associations concerned with International traffic, principally on the European Continent. 2s. By post 2s. 2d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiments. Eight single-acting cylinders with rotary valves. An application of the principles of the Williams central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2s. Post free 2s. 3d. *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

tion. The ordinary and deferred dividends of 12½ per cent. are maintained.

William F. Noble & Co. Ltd.—The establishment has been announced of William F. Noble & Co. Ltd. at 34, Victoria Street, Westminster, London, S.W.1; telephone number Abbey 6675 and cable address "Charrua London." The firm will deal in specialised exports and imports (mechanical, electrical, and civil engineering supplies). Scientific and technical consultations in Portuguese and Spanish are available within the organisation, as also for general matters relative to supplies.

Bristol Office of Tufnol Limited.—The demand for Tufnol products in south-west England and South Wales has increased rapidly in recent years. The firm of Tufnol Limited has, therefore, found it

Effective Workshop Lighting



An example of Metrovick blended lighting in a rail bending shop

necessary to open a branch office at 6, Clare Street, Bristol, 1; telephone, Bristol 23304-5. This branch will control the selling arrangements of Tufnol in this area and will co-operate in technical developments incorporating its use. Hitherto this responsibility was shared by the Birmingham and London offices of Tufnol. The Manager of the new branch is Mr. W. L. Tout, who has been resident engineer for the firm in the West Country since 1945.

Scammell Lorries Limited.—The net profit before taxation, for the year ended December 31, 1949, of Scammell Lorries Limited was £199,858; income tax and profits tax absorb £103,411 and after deducting £3,712 dividend on preference stock the balance of net profit is £92,735. Added to this is £48,260 balance brought forward and £4,895 in respect of excess provision for taxation in previous years, making available for distribution the total of £145,890. At the recent annual general meeting a dividend of 10 per cent., less tax, was approved.

Sheffield Twist Drill & Steel Company.—The net profit for 1949 of the Sheffield Twist Drill & Steel Co. Ltd. was £398,198 (compared with £379,121 for 1948), an increase of £19,077. In arriving at the net profit for 1949 the sum of £5,791 (nil) has been provided in the writing down of freehold properties. After providing £313,619 for tax there remains £84,579 (£81,371), which, with £18,332 (£13,503) balance brought forward, provides £102,911; of this, dividends absorb £76,542, leaving £26,369 to carry forward. A final ordinary dividend of 10d. a unit (making 1s. 4d. a unit for the year) has been approved.

Holiday Runabout Tickets in Scotland.—This season British Railways is issuing Holiday Runabout Tickets in nineteen districts in Scotland, as compared with seven last year. Among the holiday and tourist districts included are: Edinburgh and the Borders; the Ayrshire Coast and Land of Burns; Glasgow and the Clyde Coast; Central Scotland; the Moor of Rannoch; Lochaber and Mallaig; Perth, Angus and the Firth of Tay; Royal Deeside and The Mearns. The tickets cost 15s., except rail and steamer tickets issued between Glasgow and Paisley and the Clyde Coast, which are priced at 30s. and 35s.

Railway Stock Market

Caution, awaiting developments in Korea, dominated stock markets, where values in all sections were again lower, although there was no very heavy selling outside Kaffirs and O.F.S. gold shares which suffered heavy falls. British Funds were lower, with 3 per cent. Transport (1978-88) down to 88, although earlier in the week there was a steadier tendency in anticipation of the latest gold and dollar reserve figures, which are expected to show excellent improvement. Having regard to all the circumstances and investors have shown great restraint. Absence of heavy selling has helped to restore confidence, especially in the industrial sections, where in many instances falls on balance for the week have not exceeded more than a few pence.

There has been rather more business in foreign rails due partly to the view that some of the money in respect of Brazilian bond repayments will be reinvested in Brazil rails. A sharp rally in Great Western of Brazil to 145s. 7½d. was accompanied by reports that the Brazilian Senate is about to give final ratification to the take-over and that shareholders will have their pay-out money by the autumn. The market continues to take the view that the pay-out will be equal to at least 155s. per share.

San Paulo 10s. units have been steady at 15s. 9d. although there were small and indefinite movements in Leopoldina stocks. The ordinary and preference eased to 9½ and 26½ respectively, although the 6½ per cent. debentures strengthened to 132½, and the 4 per cent. were 93½. Leopoldina Terminal 5 per cent. debentures were 87½ and the ordinary units 1s. 6d. On the other hand there has been a heavy fall in United of Havana stocks in the absence of any further news of take-over developments from Cuba. The 1906 debentures were down to 19, while the 4½ per cent. Cuban debentures were back to 52, and the 4½ per cent. debentures fell heavily to 22. There was also profit-taking in other directions, La Guaira ordinary stock easing to 70½, while Bolivar "A" debentures receded to 83 and the "C" to 50. Elsewhere, Antofagasta ordinary and preference have been steady at 6½ and 40½ respectively. Manila

"A" debentures were 80 and the preference shares 6s. 6d. Mexican Central "A" bonds were lower at 34. Nitrate Rails kept steady at 75s. Chilian Northern 5 per cent. debentures have changed hands around 31½, and Costa Rica second debentures at 22½. Taltal Railway shares were dealt in around 16s. 3d.

Canadian Pacific at 28½ reflected the fall in dollar stocks which has taken place. French railway sterling bonds were again steady.

Road transport shares have been mostly well maintained, though B.E.T. stock following the rise on the good impression created by the results, have reacted sharply to 430. Southdown Motors were 113s. 9d., Lancashire Transport 78s., and West Riding 60s.

Iron and steel shares moved back moderately, but losses were again not more than a few pence, and were due more to absence of demand than to selling. Holders realise that in most cases yields are quite attractive and that because of a progressive policy prospects of dividends being maintained are good. John Summers £5,000,000 debenture issue has attracted considerable attention.

At the time of going to press, John Summers shares have kept steady at 29s. Dorman Long eased a little to 29s. 6d. and United Steel to 25s. 3d. Thomas & Baldwins at 13s. reflected a little profit taking after the rise in price which followed the financial results. Beardmore fell back to 41s. 3d., Vickers were lower at 28s. 4½d. and Babcock and Wilcox were 61s. 6d. In addition Stewarts and Lloyds shares at 54s. 6d. also moved slightly lower on balance.

Movements in shares of locomotive builders and engineers were again small and indefinite. Beyer Peacock were 22s. 1½d., Vulcan Foundry 19s. 9d., North British Locomotive 17s. 3d., and Gloucester Wagon 51s. 9d. Wagon Repairs 5s. shares were 16s. 6d., Birmingham Wagon 28s., Charles Roberts 83s. 9d., and Hurst Nelson 57s. 6d. North Central Wagons were 13s. and Central Wagons 82s. 6d. T. W. Ward kept steady at 60s. 6d. and G. D. Peters 5s. shares were dealt in around 17s.

Forthcoming Meetings

July 8 (Sat.).—Irish Railway Record Society. Visit to railways of Bord na Mona at Portlannington.

July 10 (Mon.)-15 (Sat.).—Fourth World Power Conference, in London. Theme of Conference: "World Energy Resources and the Production of Power."

July 11 (Tue.).—British Standards Institution, in the Council Room of the Institution, 24, Victoria Street, London, S.W.1, at 3 p.m. Annual General Meeting.

July 12 (Wed.).—Institute of Welding, at the offices of the Institute, 2, Buckingham Palace Gardens, London, S.W.1, at 2.30 p.m. Annual General Meeting.

July 15 (Sat.).—British Railways, Southern Region, Lecture & Debating Society. Visit to Surrey Iron Railway, commencing at Coulsdon at 2.30 p.m.

July 16 (Sun.).—"Railway Pictorial & Locomotive Review." Great Northern Railway Centenary train between London and York, depart Kings Cross 8.55 a.m.

Traffic Table of Overseas and Foreign Railways

	Railway	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date			
				Total this year	Inc. or dec. compared with 1948/49		Total	Increase or decrease		
							1949/50			
South & Central America	Antofagasta ...	811	25.6.50	£ 61,700	—	£ 17,350	25	£ 1,478,564	—	£ 165,260
	Costa Rica ...	281	Apr., 1950	c852,959	—	c156,386	43	c8,449,421	—	c1,679,807
	Dorada ...	70	Apr., 1950	39,295	+	9,554	17	165,766	+	45,455
	Inter. Ctl. Amer. ...	794	May, 1950	\$1,083,611	—	\$83,330	21	\$5,914,799	+	\$466,171
	La Guaira ...	22½	May, 1950	\$99,200	—	\$4,255	22	\$444,361	—	\$111,568
	Nitrate ...	382	15.6.50	18,288	—	4,551	24	212,394	—	11,680
	Paraguay Cent. ...	274	26.6.50	£ 194,399	+	£ 484,678	51	£ 5,786,649	+	£ 2,578,630
	Peru Corp. ...	1,050	May, 1950	\$6,674,000	+	\$1,515,689	48	\$64,334,058	+	\$18,415,630
	„ (Bolivian Section)	66	May, 1950	Bs. 9,171,000	—	Bs. 1,225,623	48	Bs. 106,682,664	+	Bs. 10,536,314
	Salvador ...	100	Febr., 1950	c239,000	—	c72,000	35	c1,300,000	—	c139,000
Taltal ...	154	May, 1950	15,500	+	4,000	48	154,420	+	54,665	
Canada	Canadian National†	23,473	May 1950	15,845,000	+	2,450,000	21	69,391,000	+	3,999,000
	Canadian Pacific†	17,037	May, 1950	10,674,000	+	517,000	21	48,324,000	—	395,000
Various	Barsi Light* ...	167	Apr., 1950	33,787	—	7,897	4	33,787	—	7,897
	Egyptian Delta ...	607	10.5.50	18,298	—	1,794	5	70,428	—	9,071
	Gold Coast ...	536	Mar., 1950	258,498	—	8,915	52	2,806,753	+	154,946
	Mid. of W. Australia	277	Apr., 1950	32,976	+	2,904	43	308,849	+	18,472
	Nigeria ...	1,900	Jan., 1950	502,360	+	38,978	44	5,017,814	+	266,573
	South Africa ...	13,347	27.5.50	1,543,851	+	237,441	12	12,591,537	+	844,414
	Victoria ...	4,744	Mar., 1950	1,974,774	+	426,993	39	—	—	—

* Receipts are calculated @ 1s. 6d. to the rupee

† Calculated at \$3 to £1